THE IRON AGE

THURSDAY, AUGUST 29, 1901.

The Verett Four-Cylinder Engine.

An engine of peculiar type has been designed by the Verett Engine Company of Little Rock, Ark. It is described by the maker as having no valve connections, no connecting rods, no straps, brasses or keys, no bed plate and no dead centers. The four cylinders, two high pressure and two low pressure, are arranged at equal distances around a common shaft formed with the necessary steam passages. The pistons are connected to yoke frames disposed at right angles to each other. By means of eccentrics the reciprocating motion of the yoke frames is changed to a rotary motion, which is transmitted to the shaft to which the cylinders are

D, F. The yoke frames consist of outwardly curved side bars connected by cross bars, which bear against the opposite sides of the eccentric M, loosely mounted on the shaft B and connected by rods to a segment rack by which it is turned, as shown in Fig. 4. The eccentric is wide enough to provide a bearing for the two yoke frames, which are at right angles to each other.

The central portion of the shaft is enlarged and formed with steam passages, this enlarged part being conical at each end to receive the steam chests. The steam passages, Fig. 3, extend from the several cylinders along the shaft in opposite directions and open out at the conical parts. The steam chests fit the conical parts of the shaft and are supported by arms adjusta-



THE VERETT FOUR-CYLINDER ENGINE.

secured. The principle upon which the engine is designed will be understood from the sketches, Figs. 3 and 4, which are taken from the latest patent issued to the company.

The cylinders C, D, E and F are mounted upon the central portion of the shaft B, being arranged tandem fashion in pairs. The cylinders C and D are high pressure, the others being low pressure. The piston rods are connected to cross heads sliding upon the guide bars G, secured upon opposite sides of the cylinders and disposed in parallel pairs. The ends of the guide bars are secured to a circular rim, which practically form a fly wheel, with the guide bars as the spokes and the cylinders and shaft as the hub. The cross head projects beyond the slides, and to their ends are attached the yoke frames K, L, the frame K being connected to the pistons of the cylinders C, E, while the frame L is connected to the pistons of the cylinders

bly secured to the frame by set screws. This construction is provided to take up wear. Each steam chest is formed with a partition forming a steam chamber, exhaust chamber and an intermediate chamber, communication between the steam and intermediate chambers being furnished by a valve. The steam supply chamber only communicates with the parts which lead to the high pressure cylinders when the valve is closed. These cylinders exhaust into the intermediate chambers; the steam then passes to the low pressure cylinders and then to the exhaust chamber. By opening the valve live steam is admitted directly to the low pressure cylinders.

Since the yoke frames are in contact with the eccentrics carried by the shaft, their longitudinal movement, due to the action of the piston, will serve to swing the frames around the eccentric, carrying the cylinders and shaft with them. This effect is produced only dur-

ing a small portion of the rotation of a single frame, but as the two frames operate alternately, a constant rotation is maintained without any dead center. The position of the eccentric is such, with relation to the chambers in the steam chest and corresponding location of the cylinders, that the yoke frames will be in proper position to swing around the eccentric upon receiving a stroke from the pistons to which they are connected. It will be noted that during each revolution of a yoke frame its longitudinal center is first at one side of the eccentric and then at the other, and that therefore during each revolution of a frame two impulses are given to it, one by a high pressure and the other by a low pressure cylinder. This engine is made in sizes from 1 to 10 horse-power.

Milliken Brothers, Incorporated.

Simultaneously with the filing of incorporation papers by Milliken Brothers, Incorporated, comes the news that selecting, as these manufacturers have done, a point immediately accessible to the great New York market, yet at the same time on a highway of foreign commerce, they have evidently had in mind the growing importance of their foreign trade, which already amounts to several million dollars annually, and in moving out of town they are at the same time following the general tendency of manufacturers in their line which has lately become so marked.

As evidence of the importance to American manufacturers, and to this company in particular, of foreign or export trade, it is significant that this firm have found it necessary to establish their own offices in charge of their resident engineers in Honolulu, Mexico, Havana, Cape Town, London, Sydney, and in this country in San Francisco as well, having representatives or engineers in Cape Town, Stockholm, Copenhagen, Christiania, Manila, and in the Far East, although these points by no means represent all the territory to which their products are constantly being sent.

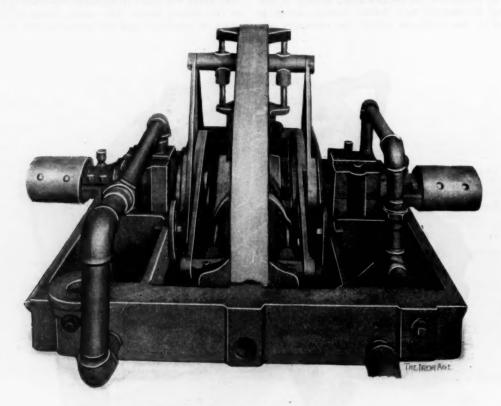


Fig. 2 .- End View.

THE VERETT FOUR-CYLINDER ENGINE.

the Riparian Commission of the State of New Jersey have granted to Milliken Brothers the right to a large tract of land under water. The property is located at the intersection of the Rahway River and Staten Island Sound, and will give the owners some 2000 feet of bulkhead, having 21 feet of water at low tide, and, as the papers show, the State lines run to and are coincident with the lines adopted by the War Department a few weeks since, upon the application of the grantees. This property is below the Nixon Ship Bullding Yards and the new car works of the John Stephenson Company.

Milliken Bros. have been engaged in the iron and steel business for nearly 50 years, having been established in 1857. Their manufactures comprise in particular all classes of structural and ornamental steel and iron work for buildings and bridges. Their present shops are located on tidewater in Brooklyn, and while impossible to obtain precise information covering the reasons for the loss of this large industry to Brooklyn, it is understood that among them are to be found the need for greatly increased room and the natural desire to escape rent and the ever increasing city taxes and municipal restrictions. In

An examination of the tract in question shows it to be admirably adapted for the purpose intended, it being a corner lot, two sides of which afford berth room for lighters and ocean steamers of draft up to 21 feet. The tracks of the Central Railroad of New Jersey run through the property on the northwest.

The bridge and structural plant when completed will be one of the largest and best equipped of its kind in this country, containing two complete bridge shops for turning out the very heaviest classes of railroad bridge work, and will be as complete as money can make it. In addition, other shops will be erected for turning out material for buildings, the whole representing an annual output of between 100,000 and 120,000 tons of steel work, and giving employment to over 2000 men.

Immediately adjoining this new plant, Milliken Bros. are now erecting, for the American-McKenna Process Company, a rolling mill for rerolling steel rails.

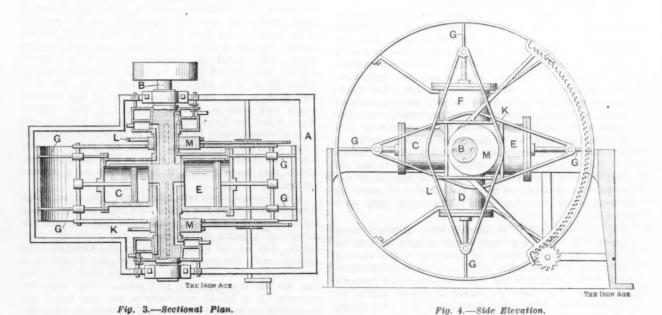
Notice of the approach of the Cunard steamer "Lucania," which arrived in New York recently, was received by the Marconi system of wireless telegraphy when the vessel was still about 70 miles off Nantucket.

German Imports and Exports of Iron.

The activity of German manufacturers and exporters is illustrated by some figures regarding the imports of pig iron into Germany and the exports of iron and steel manufactures, which have just reached the Treasury Bureau of Statistics. They show that the importations of pig iron increased from 462,000 tons in 1897 to 830,000 in 1900, and those of rough ironware from 43,000 tons in 1897 to 73,000 tons in 1900; while the exports of iron and ironware increased during the same period from \$82,000,000 value to \$118,000,000; machines, from \$30,-000,000 to \$45,000,000; rolling stock and ships (not wood), from \$3,000,000 to \$9,000,000, making a total increase in these three items of iron and ironware, machines, and rolling stock and ships, from \$114,000,000 to \$172,000,000 in a period of three years. Exportations of machines, chiefly of cast iron, increased from 118,100 tons in 1897 to 167,000 tons in 1900; those of wrought iron from 22,000 to 38,500 tons; boilers, from 4400 to 5400 tons; carding machines and accessories, from 270 to 500 tons; while locomotives and locomobiles fell from 13,200 to 12,300 tons. On the other hand, imports have also grown; those

and pipes (rolled and forged) from 22,300 to 20,300 tons. Exports, however, increased; bridges and parts thereof, from 6300 to 9000 tons; rough wrought iron parts of machines, from 1900 to 2970 tons; railway wagon axles and wheels, &c., from 41,000 to 47,000 tons, and tubes and pipes (rolled and forged), from 32,000 to 40,000 tons. In fine cast iron and wrought iron goods the exportation rose from 23,600 to 30,300 tons, especially in sewing machines without stands and in needles and in parts of clocks and watches. The exportations of machines have steadily risen, in spite of increased competition in the world's markets—namely, from 167,000 tons in 1897 to 235,000 tons in 1900. The importation in the latter year was nearly 100,000 tons, valued at about \$19,000,000; it was \$17,000,000 for 70,000 tons four years ago.

The American Shipbuilding Company of Cleveland have closed additional contracts which insure a larger tonnage than was ever before ordered on the Great Lakes in one season, and 1901-1902 will be the banner year in the history of the company. An order for five



THE VERETT FOUR-CYLINDER ENGINE.

of iron and ironware increased from \$17,000,000 in 1897 to \$30,000,000 in 1900; machines, from \$10,000,000 to \$19,000,000; machines, chiefly of cast iron, increased from 51,500 tons to 69,400 tons; those of wrought iron, from 6600 tons to 15,300, and those of wood, from 3900 to 4500 tons; while locomotives and locomobiles increased from 3440 to 4300 tons, and sewing machines from 3030 to 4200 tons.

The importation of pig iron was chiefly from the United Kingdom, being, in 1899, 670,000 tons from the United Kingdom and 30,900 from the United States. The growth from 1897 to 1899 was chiefly in that imported from the United Kingdom, the increase from that country being 140,000 tons, while from the United States it was only a little more than 1000 tons.

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The great increase of importations of tin plates in 1899 has receded, and the exportation is much larger than in former years. The imports amounted to 11,600 tons in 1897, to 10,900 tons in 1898, to 23,800 tons in 1899, and to 18,200 tons in 1900. The imports of malleable iron (iron or steel, rolled or cast), in bars, tires, plowshares, &c., increased from 29,500 tons in 1897 to 37,800 tons in 1900. The exports of these articles have decreased from 247,000 tons in 1897 to 173,000 tons in 1900. In the years 1897 and 1900 rough iron figured for imports at 4800 and 7400 tons, and for exports at 107,000 and 94,000 tons respectively. In the very rough ironware the imports have dropped, rough cast iron goods from 25,600 tons in 1899 to 21,600 tons in 1900, and tubes

steel steamers to cost about \$1,500,000 was placed last week by the newly organized National Transportation Company, but the shipbuilding company were unable to guarantee the delivery by April, 1902, of five boats, and a deal was made for the purchase of the three 4800-ton steamers building for the Mutual Steamship Company, who through the death of one of the leading stockholders have decided to go out of business and sell the boats. One of the boats will be lengthened 24 feet, which will make her a 5200-ton ship. The two boats which will be built will have a capacity of 5500 tons and 6200 tons each. The two largest boats will be about the same size as those ordered by the Hawgoods and described in the last issue of The Iron Age. They will have triple expansion engines, and will be fitted with the Hamden hot air system. This order makes 23 vessels that the American Shipbuilding Company have under contract, and as there is no more room at the shipyards it is likely that no more contracts will be closed this season.

The Kirk-Latty Mfg. Company of Cleveland, manufacturers of stove bolts, tire bolts and similar lines, are letting contracts for an extensive addition to their plant, which will give them 375 x 50 feet additional floor space. The company have orders on their books which will keep them busy for many weeks in advance. The company have recently brought out a new catalogue describing their various products and giving exhaustive data regarding the line.

American Commercial Supremacy.

BY EGBERT P. WATSON, ELIZABETH, N. J.

The very heavy capitalizations of various industries in this country recently have attracted attention both at home and abroad, not only for their scope and large number, but also by the manifest intention of the operators to control certain lines of manufactures. It is natural that this should excite alarm, abroad especially, where vested interests are very large in the aggregate, and that serious consideration of the best means to retain trade should occupy the attention of foreign manufacturers. Technical and financial journals are discussing the subject from their standpoints, and it is proposed to send deputations of artisans, skilled in their several callings, to this country to examine into our methods in order that they may discover, if possible, how it is that we are able to turn out so much more work in a given time with a given plant than foreign manufacturers are able to; but it is evident to even a superficial observer that none of these measures will meet the emergency.

For many years last past American workshop systems have been fully discussed and illustrated in the columns of The Iron Age, not only those in general use, but valuable propositions as well, and the same is true of publications in other lines of trade. As for deputations, they began with the first Paris Exposition, and have descended upon our shores from all countries where manufacturing is carried on to any extent, without benefit to them or injury to us. Deputations are like prophets in one respect, without honor. They are the minority, and when they return the majority of their countrymen deny the possibility of the things that they allege they saw done, and go on in the old way. This is the natural order. It is not to be expected that 50 men can alter the practice of years by visiting other countries and telling what they saw there.

If the renaissance of foreign trade depends upon deputations, or even private commissioners, it will be a long time in maturing. In addition to the visiting craftsmen of other countries, their own manufacturers have come here, and not only inspected our systems thoroughly, but have purchased complete outfits of American tools, which they installed in their own shops, and were then unable to turn out the same amount of work of the same quality in a given time.

If these assertions are correct, then it is apparent that Europeans generally do not comprehend the whole situation, or at all realize that the question is far more complicated in all its aspects than they imagine it to be. It is not a proposition which is based upon tools, plants, systems, or even natural resources and untiring energy. The way of living is also connected with it, and it is this which delays, perhaps baffles is a better word, a satisfactory solution of the problem. It is not merely industrial, but politico-social as well. The liberty of the subject is a factor in the equation; with it omitted there can be no serious opposition to American progress everywhere.

The conditions of "life, liberty and the pursuit of happiness" are so vastly different in Europe and America that they cannot be ignored when commercial supremacy is discussed. No ways and means, retaliatory tariffs, or adoption of American tools will be of any avail. The balance of trade will always be in our favor so long as we maintain the integrity of our institutions. I have said that the ways of living are different abroad. To illustrate my meaning, suppose an American works transported bodily to England (as a country where practically the same language is spoken) in a night, the men leaving off work in this country and beginning again the next morning in England under English shop rules and working hours. How would the output compare with the day previous in America? I am free to assert that it would be much less, not merely from the unfamiliarity with English ways, but from the brake that would be put on by English methods.

The Working Hours.

The working hours are cut into segments, and the speed of production regulated by that of the slowest mule in the team; if Hodge can turn only so many feet of shafting per hour, no other man must turn any more. That restriction would of itself throw everything out of gear so far as an American workman was concerned. Another one is that English shops commence work at 6 a.m., stopping at 8 for breakfast, beginning again at 9. That is to say, at the very time-the early hourswhen the men are at their best, most alert and capable, they cease work. The machine tools stop. That is a condition of things which would not be tolerated one moment in an American shop; but it is the custom, and therefore sacred in England. There is no reason whatever for the loss to the firm, because, although the same number of hours nominally may be worked weekly, there is loss by reason of the interval transpiring between stopping and starting in full work again. There is at least five minutes lost on each machine tool, and much more than this with fitters and erectors, who have an inordinate amount of gossip to exchange upon what shreds and patches of happenings they may have picked up during the breakfast hour. A workshop is not a penal institution, and it is impossible for an overseer to be behind every man to find out what he is talking about. Suppose a force of 300 men only, and 100 machine tools; under the conditions named the unproductive time would be 33 hours per working day, or nearly 20 working days in the whole week. This is a long price to pay for the interruption of the working hours, and must be directly charged to that custom. Were it not for it the men would keep on working and their attention would be confined to their jobs instead of being diverted from them. When the machine tools stop in an American works, even to lace the main belt, which may have parted, it is regarded as a serious matter.

Most foreign observers admit that American shops turn out more work per capita than their own, and they try to account for it by the assertion that our men are driven as a collie drives sheep. We certainly work harder, but we are compelled to by the foremen, who occupy much the same position that the keeper in a State prison does, sitting upon a high stool where he can see all that goes on and admonishing laggards severely. It is hardly necessary to say that this is an erroneous conception; there is no coercion or intimidation of any sort in American shops, but the work proceeds because the foremen and others over him plan the series of operations before it is undertaken. Quite the contrary obtains in England, where, if a "Consulting Engineer" writing in Engineering is correct, the men take what they like to do the best upon any given machine, work a little while upon it, get tired of it, then throw it aside for something else. The writer mentioned says that he found he could not make any money by this way of working, and therefore abandoned it for American methods pure and simple, since which time he has gone ahead rapidly.

It is not only in the shop that delays are encountered, but in the counting room as well. It is of little use to adopt better systems in foreign workshops if the ancient and honorable practices that have been handed down from time out of mind are still kept in force. To abandon these, however, would shake the very foundations of precedent, the worship of which goes on ceaselessly. Certain things cannot be done because they never have been done; certain other things must be done because they always have been done. Selah! Now the via precedent is a long road, and tiresome withal, so in this country we simply cut across lots and get to the terminus quicker. We do not care what man has done in the past, but are more concerned with what he is going to do now, and how soon.

Business Methods.

Furthermore, when an American has business with an American firm, he goes to their place, finds out who has charge of the line he is interested in, and transacts his business there and then; but if he goes to England and attempts the same course, he will find that he has much to learn. "Other lands, other customs," and no summary proceedings are tolerated. Foreign business houses require that visiting foreigners shall be duly accredited before they even get a hearing; as for having persons walking in upon them, wearing unorthodox hats and coats, flourishing cards and demanding prices and terms on the spot, such practices are subversive and cannot be permitted. They must be identified through regular channels before they will be recognized as having any rights whatever. If by force of arms or strategy an enterprising American should force his way into the office of a foreign general manager, his reception would be like unto that of Patroclus's when he interviewed Thersites ("Troilus and Cressida," Act III), to wit:

Patroclus: "I come from the worthy Achilles."

Thersites: "Ha!"

Patroclus: "Who most humbly desires you to invite Hector to his tent."

Thersites: "Hum!"

Patroclus: "And to procure safe conduct from Agamemnon."

Thersites: "Agamemnon!" Patroclus: "Ay. my lord."

Thersites: "Ha!"

It must be admitted that this line of conversation is calculated to depress visiting Americans (perhaps it is the intention of it), but it just as surely defeats the object of keeping an office open, which is supposed to be for the convenience of persons having business with a firm, not to interpose obstacles to it. Here we listen to all comers first, regardless of their ancestry, and find out subsequently whether we want further relations, which seems to be commendable upon the score of courtesy at least. It takes too much time to do business by the methods cited, and time means money the world over.

Thus far I have arranged certain business methods pure and simple, but have asserted in previous lines that American supremacy, as shown by our recent commercial development, is both political and social, by which I mean the relative advantages enjoyed by citizens of this country as compared with other countries under different auspices. That these are factors cannot be denied, and very important ones in the struggle for first place.

The Social Status.

It makes no difference in this country what a man's business is, provided that it is lawful, his social status is assured, and all his rights under it are protected. The humblest citizen can summon the greatest citizen for overt acts with the certainty of protection if his cause is just. Is this the case in foreign countries? Is there not such a thing as class legislation there, and are there not some hereditary rights and privileges accruing to persons of rank which commoners cannot command?

Do not class restrictions as effectually hamper men from realizing all their ambitions, as caste in India prevents universal intercourse? In foreign countries a certain nominal freedom of speech and a pseudo share in the government is conceded in certain branches of it, but the actual administration is based upon what some hereditary power thinks is best for the people, by no means what the people think would be best themselves. Abroad a certain number of law makers say what the people shall have, but here 14,000,000 of voting law makers say what they are going to have, and they have it. The effect of American institutions, manners and customs wholly changes those of foreigners in a very short time after their arrival here. Some years ago labor was so scarce in the coal regions that the operators were forced to import large numbers of Hungarian miners. When they reached here and had set up their domiciles, a hue and cry went forth at once on account of their habits. In the city of Scranton they were segregated, and not allowed outside of certain limits; but in a very short time, a few years only, the force of example, aided by some salutary ordinances, convinced the fiery Huns that the American way was the best, and I am assured by those who know that the descendents of the once despised Hungarians are among the most desirable citizens. The same is true of emigrants from all other countries who seek asylum among us; so soon as they are able to comprehend our laws and institutions, and learn that liberty is not license, they adopt American ways and become part and parcel of the Republic.

I have said previously that foreigners do not seem to comprehend this aspect of the question of commercial supremacy, and I have formed this opinion from reading the published views and speeches of their essayists and officials upon what they term "the American invasion," meaning our occupation of foreign markets wherever we can do so with profit. In none of the utterances can I find other than the most optimistic views. They profess to feel that the strength of our position lies in financial combinations of great magnitude, and consider that the best way to bring our schemes to naught will be to form syndicates of their own, with still larger capital, to exploit certain threatened branches of trade. They point to what they have done in the past, forgetting that the conditions were vastly different. Any people can be enterprising when they have no competition. Foreigners concede that in our microcosm we have done things which have commanded admiration, and they intend to discount any advantages we possess in great energy and unlimited resources by waking up a little, as one of their essayists says, and resolving to do better in the future. In all this there is a note of despair, and in this connection despair means that they feel that they have no defense which can be opposed to the conditions which exist without another form of government.

I confess that I do not know how this change could be brought about, and therefore do not attempt to tell; but I feel quite certain that, given a government whose base rests upon freedom of speech, thought, action, liberty of the person, unchecked by bayonets in the foreground or in the background, there is nothing that can prevent it from reaching to the uttermost parts of the earth, outstripping other peoples without similar advantages. Men who are without a stake in the future of their country (beyond a sentimental one) are emasculated, in comparison with the virility of those whose ventures comprise "their lives, their fortunes and their sacred honors." That is practically the nature of the ventures represented by American commerce, for the men in it are, compared with other nations, a distinct race with its own methods of accomplishing certain ends. Unhampered by routine rule, unfettered by paralyzing precedents, they will possess the earth, because their base is assured.

This United States is a flexible, automatic autonomy, adapting itself to all conditions which may arise, meeting every exigency with serene confidence in its ability to overcome it by common sense legislation. Even if that shield and buckler of the State, the Supreme Court, should be abrogated, the people would still remain, and they are truly the court of last resort. They move slowly sometimes, but when they do move they accomplish their purposes.

The Colorado Fuel & Iron Company.-At the annual meeting of the stockholders of the Colorado Fuel & Iron Company, at Denver, J. J. Mitchell, James A. Blair, John Lambert and John W. Gates were elected directors, succeeding E. Thalmann, Benjamin T. Cable, J. T. Kebler and H. R. Wolcott, whose terms of office had expired. The newly elected board organized by the election of the following officers: Chairman, J. C. Osgood; president, J. A. Kebler; first vice-president, A. C. Cass; second vicepresident, Dennis Sullivan, and third vice-president, J. E. Heimerdinger. The new Board of Directors follows: Joseph E. Heimerdinger, New York; John L. Jerome, Denver, Col.; A. C. Cass, Denver, Col.; Dennis Sullivan, Denver, Col.; W. H. James, Denver, Col.; J. B. Grant, Denver, Col.; J. A. Kebler, Denver, Col.; D. C. Beaman, Denver, Col.; J. C. Osgood, Denver, Col.; James A. Blair, J. J. Mitchell, John Lambert and John W. Gates. The most important change in personnel of the Colorado Company is the retirement of Mr. Osgood from the presidency to accept the chairmanship of the Board of Directors, J. A. Kebler, the new president, was formerly vice-president and general manager. The new vice-president, J. E. Heimerdinger, has been an active director of the Colorado Company for some years.

The Johns Shears and Punches.

Henry Pels of 66 and 68 Broad street, New York, is introducing into this country the Johns shearing and

distance of two teeth. When the lever b moves in the direction of y the knuckle slides loosely to the next tooth, the spring c' preventing any jumping. The result, therefore, is that the working shaft a is operated in a jerky manner by the oscillating movement of the lever b, a motion which is specially suitable for cutting and shearing tools of this class. In this simple manner power is transmitted from a shaft equipped with a fly wheel, running at a speed of 500 revolutions, to a working shaft making 10 to 20 revolutions. A German authority,

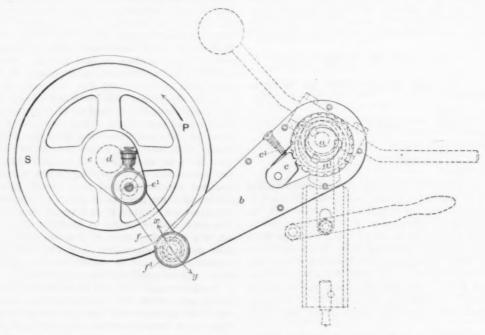


Fig. 1 .- The Johns Lever Driving Device.

punching machines, which have been developed in Germany. The design is based upon a very interesting method of transmitting power from a rapidly revolving shaft, which stores power in a fly wheel, to the work

"Schiffban," quotes a number of data as to the capacity and weight of the machines which prove that the consumption of power is low, and that the weight and dimensions are moderate considering the range of work,

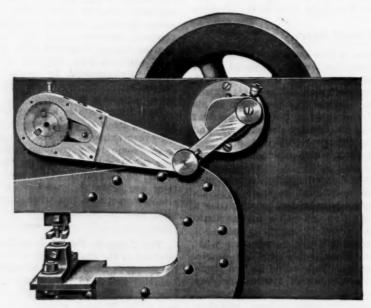


Fig. 2 .- The Johns Punch.

THE JOHNS SHEARS AND PUNCHES.

without the intervention of any gearing, with the attendant drawbacks. Fig. 1 illustrates the principle involved. The power shaft d, rotating at a high speed, through the crank e and the connecting rod f, actuates the lever b. The latter is mounted loosely on the working shaft, upon which the ring a' is keyed. The lever swings through the short arc x y. When the lever b is moved in the direction of x a projection in the knuckle c engages in teeth and forces the shaft a to rotate to the

and that on double machines the storing power of the fly wheel is such that shearing and punching operations may be carried on simultaneously, although beyond the usual capacity individually.

The accompanying engravings show how the Johns device has been applied to different types of machines. Fig. 2 illustrates a simple punch, and Fig. 3 a single plate shear. A combined punch and shear is illustrated in Fig. 4, and a beam shear in Fig. 5. The character of

the work done by the latter is shown in Fig. 6, reproduced from a photograph.

British and American Cast Iron Pipe Practice.

Clark-Harrison & Co. of London, the foreign agents of the United States Cast Iron Pipe & Foundry Company,

ering into the trench, for making the joint with the necessary supply of lead and hemp, and for excavating several cubic feet of earth under the socket, so that the joint may be properly calked. There are in each mile of, say, 10-inch diameter pipes, 587 lengths of British pipes, and 440 lengths of American pipes. Hence, if the total of this expense is "B" shillings for one length of pipe,

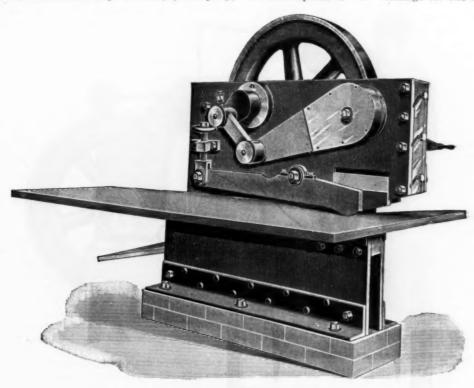


Fig. 3 .- The Johns Shear.

have written a letter to the London *Engineer*, in which they institute the following comparison of British and American practice in the cast iron pipe trade:

1. Extra Length.-All sizes of American pipes measure

it would be per mile 587 "B" shillings for British pipes, and only 440 "B" shillings for American pipes—that is, the extra length of American pipes reduces the expense of laying by 147 "B" shillings per mile, which is a sav-

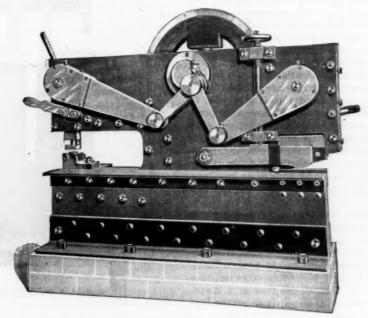


Fig. 4 .- The Johns Combined Punch and Shear.

THE JOHNS SHEARS AND PUNCHES.

in length about 12 feet, exclusive of socket, whereas the small sizes of British pipes are only 9 feet. It is very evident that the extra length of American pipes is an advantage. The expense per length is in both cases practically the same for inspecting and testing with the hydraulic press, for transporting to the trench, for low-

ing equal to exactly 25 per cent. of the cost of laying British pipes. Nor is this the only advantage. In a mile of British 10-inch pipe there are 147 more sockets than in a mile of American 10-inch pipe. The socket of an average 10-inch pipe weighs 50 pounds or more; hence, by using American pipes of the same thickness of shell,

you would effect a saving in metal of 147 times 50 pounds, or about 31/4 tons, in every mile of pipe purchased.

2. Turned and Bored Pipe.—The only form of joint used in the United States by water works and gas works is the ordinary socket and spigot calked with hemp

Machinery Hall will be four stories in hight, and will be used for technical instruction in machine shop and foundry work. The first floor will be used as a forge shop, the second floor as a machine shop, the third floor as a pattern shop, and the fourth floor as a foundry. The foundry will be lighted with a saw toothed roof,

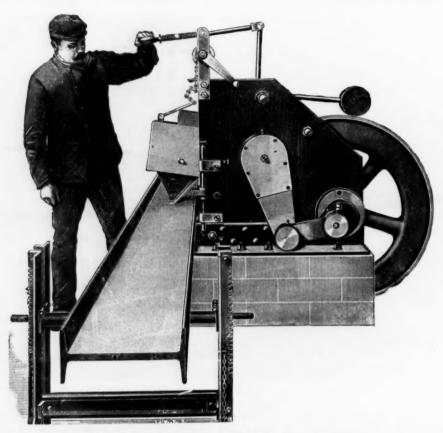


Fig. 5 .- The Johns Beam Shear.

and lead. It is considered far superior to the turned and bored joint used so largely in Great Britain, for the reason that the latter fails to allow for expansion and contraction, and renders the line of pipe so rigid that the slightest settling of the ground is likely to cause either a fracture of the pipe or a leaky joint.

3. Cutting End off in Lathe.—This is required by a large proportion of British specifications, on the principle that some slag or other impurities are invariably retained in the top of the mold, rendering it necessary to cut away that portion of the casting. In American practice it is not found necessary to cut off the spigot ends of the pipes, for the reason that the iron which is used is sufficiently high in graphitic carbon, silicon and phosphorus to render the iron mixture so fluid when in the molten condition that the slag and impurities rise freely to the top of the ladle, and are not allowed to enter the mold.

The fact that American foundries have been making a satisfactory quality of pipes for more than half a century without resorting to this practice of cutting off the spigot ends would be sufficient evidence that it is unnecessary, provided a proper quality of iron is used. Hence, why do British makers incur this extra expense in manufacturing, and so place themselves at a disadvantage in competing against American manufacturers?

An exhibition of minerals and products of mineral industries, of mining, machinery and processes will be opened December 2 and continued for 15 days at the Grand Central Palace, New York City. A historical and entertaining feature of the exposition will be an extensive reproduction of a frontier mining camp.

The Armour Institute, Chicago, is arranging for the erection of Machinery Hall, the first of the new buildings to be erected with funds provided by the Armour family in the recent gift of \$1,000,000 to this institution:



Fig. 6.—Beams Sheared by Machine.

THE JOHNS SHEARS AND PUNCHES.

rendering every part of the room available for the most detailed work. This building will be fully equipped with the most modern facilities for thoroughly instructing the students in all details of the branches taught here. The entire building will be fire proof, mill construction being used exclusively.

Developments at the "Soo."

SAULT STE. MARIE, ONT., August 26, 1901.-In anticipation of the early completion of their great Michigan power canal the Michigan Lake Superior Power Company and their Canadian ally are constructing a retarding dam across the foot of Lake Superior at this point. The concrete piers are finished for a fourth the distance across the river and the steel work is under way. Much of this dam will be completed by the commencement of winter. The Michigan canal, that is expected to so draw from Lake Superior as to necessitate this retarding system, is nearly ready for operation. The excavation is practically finished, except for the upper and lower ends. and there remains the cleaning up and lining of the canal prism to secure the best results from the flow. At the lower end, where the canal widens to more than 1/4 mile and its water enters the power house, an enormous amount of earth has been excavated. The power house is partly up, all its foundations are in, and at the southern end the work is under way of placing the 80 Stillwell-Bierce turbines of 600 horse-power each. There are to be three stories of steel construction in this great power house, which is to be 1400 feet long and more than 100 feet high, and it is stated by the steel makers that it is the largest job of steel erection under way in the country, with its more than 6000 tons of shapes and plates. Half a dozen traveling cranes, &c., are installed on the structure and several hydraulic riveters are at work in the steel of the turbine chambers. It will be pearly a year before the water is turned into this canal. On the Canadian side of the river the second 50,000 horsepower canal is started and excavation is progressing

Eight large steam dredge boats are working day and night on the Canadian channel above the Government lock preliminary to the erection of an ore dock 1800 feet long, for the handling of Michipicoton and other iron ores. This dock will be near the steel plant now nearing completion, and a short distance from the larger plant contemplated for the future. The rail mill at this point will be ready for operation in two or three months, and its entire output for some years has already been sold to the Canadian Government.

At this plant there will be as extensive an application of electricity for power as possible, and the second Canadian canal is expected to furnish this as well as power for other works. Three 8-foot cupolas are installed for melting pig for conversion, the necessary material being expected for a time to come from the works of the Canada Iron Furnace Company, at Midland. Later, when the local blast furnace plant now under way is completed, the direct process will be adopted and metal taken from it. Two acid lined converters of 5 tons capacity each are swung in place at the northern end of the massive stone buildings. After being blown the metal will be poured into molds on buggies and stripped by an overhead Wellman-Seaver stripping crane that is also provided with an auxiliary trolley to change the ladles on the ladle crane. There are two four-hole pit furnaces into which the ingots are charged. They are delivered to the blooming tables, and to the rolls also, by a single overhead electric crane of Wellman-Seaver design. The ingots will be passed through a 32-inch mill, sheared and charged into Siemens regenerative heating furnaces, of which there are four. The rail mill consists of three stands, first and second roughing and finishing mills, and is driven by a 40 x 48 inch Porter-Allen engine. Electrically driven transfer tables will manipulate the material here and the rolls are under an electric overhead crane for handling rolls when changing sections. After passing the saws and a cambering machine the rails are to be cooled and finished and handled by pneumatic hoists on cars for disposition, all the operation being from start to finish under one roof. This plant is expected to make rails of 30 to 60 feet length and of any section to 85 pounds, as well as to roll structural shapes. Tracks of the Algoma Central & Hudson Bay Railway run into the buildings at the finishing end and connect with the ore docks and furnaces at the other end. The structures are all banded sandstone in the handsome

style adopted for all the mechanical buildings of the company, with roofs of corrugated iron on steel frames. The present main building is about 1500 feet long and of various widths. All foundations are of concrete.

The company are just completing and moving into a large and commodious fire proof office building of sandstone and steel located beside the No. 1 tailrace of the Canadian canal.

The Algoma Central & Hudson Bay Railway is being pushed north to a connection with the Helen Mine branch projected northeast from that mine and the nower Josephine, and it is hoped that ore may be delivered all rail to the Sault hereafter. Shipments from the Helen Mine are up to expectations, and are now going into Cleveland and Ashtabula in moderate volume, as well as to Canadian furnaces.

A number of new buildings in connection with the varied metallurgical industries are now going up. In the calcium sulphite works, where a sulphite liquor is made from pyrrhotite and limestone, the finely ground pyrrhotite is passed down through a roasting furnace designed especially for the work, and taken off at the bottom as an oxide of iron and nickel. The sulphurous acid gas roasted out is passed to the bottom of vats 100 feet high with limestone or dolomite quarried in the surrounding region. The gas is drawn upward, and as it rises meets a descending stream of water and is absorbed. This solution working on the calcium carbonate forms a calcium sulphite, that is drawn to tanks, the strength of the liquor being regulated by the proportion of water passing into the vat. There are eight of these vats, each 5 feet in diameter, and built of heavy timber. For the utilization of this liquor a sulphite pulp mill is provided, in which are what are called digesters, and where the process does not differ greatly from that employed in mills making a similar product except as to size. The digester building is 125 feet high and contains the largest digesters ever built. They are tall steel cylinders lined with acid proof brick and each will hold 30 cords of chopped wood. The plant has a capacity for 65 tons of finished pulp every 24 hours. A 1000 horsepower Babcock & Wilcox boiler plant furnishes steam for the "cooking" and drying, and the machinery is electrically driven from the company's canal.

Buildings for the treatment of the ferro nickel ore on a commercial scale are about completed. Some ferronickel, carrying nearly 6 per cent. nickel, and made by the process to be utilized here, is on exhibition in Buffalo. The process is electrical.

A sulphuric acid plant to utilize the catalytic process is under erection. There will be a large excess of sulphurous acid and it was necessary to devise some method of treating it. Much sulphuric acid will be for sale and the company will use considerable in various processes, among which will be the making of acetic acid.

A contract for the delivery of 300 cords daily of hard wood from the lands of the companies has been let and cutting is to commence at once. This wood is to be carbonized, and Oscar Daube of New York has completed a portion of a plant for the work. The part done is one unit of a large installation that will be placed if successful on the woods to be treated. An important saving in pyroligneous acid and acetate of lime is promised by these works, and this acetate will be manufactured into acetic acid for the markets.

The wood is to be carbonized for the two charcoal furnaces of the projected plant, and the amount under contract is about half the requirements. The remainder, it is hoped, can be secured from settlers along the line of the A. C. & H. B. Railway, and as fast as these settlers show their ability to furnish timber the amount contracted will be reduced and a continuous market given the settlers.

I take it that one of the most difficult of the many problems undertaken by Mr. Clergue and associates is that of settling the region to the north of the Sault, along their line of railway. This settlement is one of the conditions under which they will earn the vast and valuable grants of land given by the Canadian Government, and an earnest and well considered effort is now about to be pushed looking to the locating upon these lands of the required number of families. The oppor-

tunities granted settlers along the line of the A. C. & H. B. Road in the way of making a start by wood chopping and the subsequent opportunities to be given under the liberal plans adopted by the company in the way of working up the products of soil and forest should have effect in bringing in people and holding them till they are successful citizens.

Added to the above mentioned metallurgical industries is the alkali works of the Canadian Electro-Chemical Company, another Clergue enterprise. Here, by the Rhodin electrolytic process, using a mercury cathode, 9 tons of bleaching powder and 5 tons of caustic soda are made daily by the 120 apparatus installed. These works are now in daily operation.

D. E. W.

Pacific Coast News.

SAN FRANCISCO, CAL., August 19, 1901.-The tie up of the sea borne business of the city, or, more correctly speaking, the partial tie up, has brought before all the necessity of putting an end to it by some means or other. A gentleman very well known in the iron industries said in substance to your correspondent: "The workingmen, machinists and others, need a lesson in these matters and they will get it; they are now getting it, they are paying for it and it is costing them dear. Many have now and will have to turn their hands to something to which they are unaccustomed and in which at this time of their life they cannot hope to succeed. The industries of this city cannot be run on the basis of trade unionism. If manufacturers and business men have to run their business at the dictation of trade unions, the sooner they pull up stakes and move elsewhere the better-the less they will lose. The Eastern manufacturers are continually pushing Westward and narrowing the margin where San Francisco can do business, and we have to look to the trade of the Orient. That trade will necessarily be ours. It is now principally in breadstuffs, lumber and foodstuffs generally-wheat, flour, meats, &c. Where lumber is sold machinery for manufacturing it will be sold, planers, shapers, &c., and the smaller tools and articles of building hardware as well. And other manufactured goods will follow. The coast, and particularly San Francisco, would then become the center of a series of flourishing industries. But nothing can be done under the domination of trade unionism. The business will leave us and seek the Northwest. The flour and wheat will go from the fields of Oregon and Washington, the mighty forest of these two States will supply the lumber, while the meat will be raised on the ranges of Idaho and Montana. Unless we can put an end to this agitation capital will leave this city and labor will follow it."

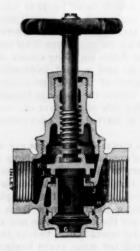
The actual condition of matters in the iron trade does not differ materially from that given in my last. The leading establishments have about the same number of men at work, and they are disposed to regard the matter from an optimistic standpoint. Lately 40 molders and a number of machinists were obtained by one large establishment from the East. But the number employed is not being added to very fast and the solution of the problem has really become one of endurance. In that, of course, the man with the most resources will doubtless win. A great many striking workingmen have gone into the country to pick hops and do other work incident to the fruit and grain harvests. But here again the general tie up on the water front interferes and lessens the opportunity for their labor. All the employers do not view the strike from the same standpoint, and the lesser establishments are praying devoutly for its termination. One slight victory has been obtained by the employers in the iron trade. Here in some cases the constitution of the union provides for a secret ballot, so that the mechanic may cast his vote without fear of being subjected to undue influence. This secret ballot was denied, but on an appeal to national headquarters the local authorities were reversed and the appeal was sustained. But no further results have followed. The men belonging to the shops where the appeal was taken may go back to work, but work in this direction has ceased.

The water front is lined up with vessels tied up by.

the strike whose crews have deserted them, and the number is being added to daily. There are on a moderate estimate 17,000 idle men in the city, but some estimate the number at 30,000. The principal steamers have contrived to get away, but generally with light cargoes. The harbor is full of coal cargoes that cannot be discharged, and we are threatened with a coal famine and, what is worse, further sympathetic strikes, that of bakers being one of them. Indeed it is seriously proposed by labor leaders to tie up all industries, stop commerce, production, &c., all because of a row over the carrying of some Epworth League packages. And outside of strike circles the general consensus of opinion is that some means should be found to put an end to all such foolishness.

The Bashlin Valve.

In the valve built by Bashlin & Co. of Warren, Pa., the seat ring J can be removed and replaced by a new one while the valve is under pressure. The stuffing nut can be packed by screwing the valve stem up against the bottom of the bonnet, which forms a tight joint. Should the disk K wear out, a new one can be easily



THE BASHLIN VALVE.

substituted, but not while the valve is under pressure. No reseating is required. An inspection of the engraving will show that all the parts liable to wear can be readily replaced by new ones.

Notes from Mexico.

Durango, Mexico, August 17, 1901.—The price of silver continues to fall, and the Mexican dollar is quoted to-day at a lower figure than for several months past—viz., 45 cents. This is a drop of 1 cent within a few days. Prior to this latest fall the decline was gradual but steady, with no reacting upward trend. Foreign exchange, though high, is not at a parity with the price of silver, a fact which is explained by bankers as being due to a supply of foreign exchange in excess of the demand. The exchange rate, however, is sufficiently high to restrict merchants' purchases as much as possible, and doubtless also to cause them to hold off as long as they can in the settlement of foreign accounts.

The rains began late this year, and there is great fear that the corn crop will be below the average in several States. There is already an advance in the price of the food cereals, which form the chief support of the poorer class of people. A prominent banker, discussing the general situation, is quoted as saying: "The big dry goods and hardware houses, the bulk of whose trade lies in the country, complain of slow collections from the rural districts. The crops will clear all this, if they are large, and will mean a big fall business in Mexico."

With regard to the industrial situation, so far as it affects the special lines represented by *The Iron Age*, there is little to be said. The strike in the iron and steel trade in the United States is seriously felt in Mexico, where construction work is under way, operations in many in-

stances having come to a standstill because expected material does not come to hand.

There is at present an oil boom in this republic, probably in some measure precipitated by the successful developments in Texas. Several strong companies are drilling wells in the States of Vera Cruz and Tamaulipas. So far something like a half million Mexican dollars have been spent without satisfactory result, although experts declare that petroleum in paying quantity undoubtedly exists in the districts.

The extensive modern steel making plant at Monterey is being pushed to completion. The company, all the officers of whom are Mexicans, are capitalized at \$10,000,-000, Mexican. It is expected that the works will be ready to commence operations in the course of a few months.

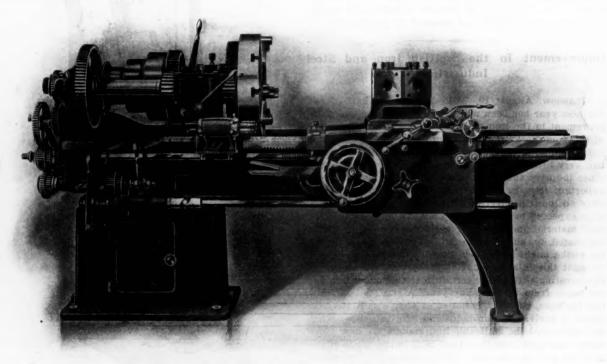
The works of the Durango Iron & Steel Company are in steady operation, the entire working force being native Mexicans. The company maintain an office and warehouse in the City of Mexico and report a steady demand for their products, which are of the best grade.

Machinery at the Pan-American Exposition.—VI.

Bullard Machine Tool Company.

The standard tools built by the Bullard Machine Tool Company of Bridgeport, Conn., are well represented at the exposition. These machines are all of the latest design and embody all the improvements made up to the present time.

Their combination turret machine has a swing 22 inches in diameter, and the bed is 8½ feet long. The head is back geared into the face plate, and has a three-section cone for a 4-inch belt, the largest section being 14 inches in diameter. It is fitted with the company's patent friction clutch for instantly changing from belt speed to back gears without stopping. The change to back gears is made by moving the clutch lever, and to the face plate gear by means of the lever shown on the front, thus giving three speeds for each—cone, back gear



The Bullard Combination Turret Machine.

MACHINERY AT THE PAN-AMERICAN EXPOSITION.

Extensive preparations are being made in the City of Mexico for the Pan-American Congress, which is to meet there in October. The representatives of the Central and South American republics participating in the congress will hold their sessions in a spacious apartment in the National Palace, which is being elaborately renovated and decorated for the occasion at a cost of about \$100,000.

Harvey United Steel Company, Limited.-This company were registered on July 16 under the English Corporation act, by A. B. Greenop & Co., 15 Victoria street, London, S. W., with a capital of £450,000, in £1 shares, "to acquire all or any of the undertakings of the Harvey Steel Company of Great Britain, Limited; the Harvey Continental Steel Company, Limited; the Harvey Steel Company of New Jersey, and the Société des Procedes Harvey, and to carry on the business of manufacturers of armor plates and steel, iron, bronze, nickel, aluminum and other metal plates of all kinds, steel and iron masters, founders, smelters, boller makers, engineers, ship builders, &c." The new company have secured the control of the stock of the New Jersey and French companies, and have bought the others outright. E. Marshall Fox, Millard Hunsiker of the Carnegie Company, Albert Vickers, and Herr Klupfel of Friedrich Krupp will be in the Board of Directors.

and face plate gear. A reversible three-jaw combination chuck is built into the face plate. The spindle has a hole through it 2½ inches in diameter. The carriage is gibbed both front and back, has full length bearing of 30 inches on the ways, and supports the turret. The feed is driven by gearing, independent of the lead screw, is changed by means of a lever on the left of the feed rod and has reverse motion. Three speeds can be obtained with each set of gears. Adjustable revolving stops are provided for both cross and lateral movements, the latter having an automatic trip. The turret is hexagonal in form, 12 inches in diameter, and has six 2½-inch holes arranged to permit a bar to pass entirely through the head.

Bullard Boring and Turning Mills.

The boring and turning mill, Fig. 2, will take work 30 inches in diameter, and 14 inches in hight under the rail and 21 inches under the turret. The table is 28 inches in diameter and has 16 changes of speed, eight with the cone and eight with the back gears. The universal chuck has three jaws, and is built into the table. The chuck jaws can be easily removed and independent jaws used whenever desired. A plain table with four independent jaws can be furnished if preferred. The turret is 10 inches in diameter and has four 2½-inch holes; it will face 30 inches in diameter. The turret slide can be set at an angle of 30 degrees for boring and turning taper roles,

and has a downward movement of 16 inches. The feeds have eight changes and range from 1-40 to $\frac{1}{4}$ inch horizontally, and from 1-80 to $\frac{1}{8}$ inch vertically, and are provided with automatic trips.

The 42-inch boring and turning mill, Fig. 3, is furnished with one turret head and one special head. It will take work 30 inches in hight. The table is 361/2 inches in diameter, is powerfully geared, and has 16 changes of speed. The teeth on both table and pinion are accurately planed. The three-jaw universal chuck is built into the table. The turret is square, 10 inches in diameter and has four 21/2-inch holes. The turret slide can be set to bore, turn and cut threads at any angle, and has a movement of 16 inches. The feed for the turret head is driven by gearing, and ranges from 1-24 to 1/8 inch by feed gears and to 1/4 inch by change gears, which are also used for thread cutting. The screw cutting feature adds greatly to the value of this machine for general use, as provision is made for all standard threads from 4 to 12 per inch, including 111/2. The feed for the left hand head has eight changes, which range from 1-32 to 1/2 inch horizontally, and from 1-50 to 1-3 inch vertically. The downward movement of head is 19 inches. The cross rail is raised and lowered by power.

Improvement in the Scottish Iron and Steel Industries.

GLASGOW, August 19, 1901.—The second half of our business year has been marked, so far, by a distinct improvement in the iron and steel trades. For the causes of this some seek an explanation in the American strike, but so far as I can gauge the situation this has really had very little effect, either direct or indirect, upon any other industry than that of tin plates, which is not an important item in Scotch manufactures. What is possibly an indirect effect is the business which has come, or is expected to come, from Canada. Some orders for steel material and iron have been received, or are being negotiated, for shipment to the Dominion, which but for the strike might have been placed in the United States. At least this is a reasonable supposition, as Canada is now treating with us for certain material which she has not taken from us for many years past. The whole of this business, however, is not so extensive as in itself to create a revival in our industries. Nevertheless, what are here called the malleable iron makers are now more busily employed than they have been in the whole of the previous part of this year. After months of depression, during which several works were running short or altogether shut down, all are now fairly well employed, both on home and foreign orders. The improvement in steel is even more marked. Not so many weeks ago steel ship plates were going begging at, it is said, as low as £5 12s. per ton. A week or two ago they were advanced to £6, less 5 per cent., and to-day are firm at £6 5s., less 5 per cent. Even yet this is lower than is quoted in the North of England, where £6 5s., less 21/2 per cent., seems to be the current rate, so we shall probably see a further advance here very soon.

A Revival in Shipbuilding.

The improvement since the resumption of work after the annual summer holidays is distinctly traceable to the revival of demand for new shipping. However that demand may be explained, and however much one may be surprised at it, in view of the great depression in the freight markets and the general unsatisfactory outlook as to the world's crops and European industries, it is real and substantial. On a rough computation the shipbuilders of Scotland have now orders on their books—a large proportion of which they are only just beginning to attack—for about 30,000 tons more than they had on hand at the beginning of the year. And yet they have this year already put into the water about 300,000 tons of new ships.

The first month of the second half of the year witnessed the placing of contracts for close upon 60,000 tons, to take the place of about 52,000 tons put into the water during that month. This was a very large tonnage to

turn off the stocks during a month nearly one-half of which was broken by holidays, but the total was swollen by one huge cruiser of 14,000 tons launched by John Brown & Co., Limited, Clydebank, for the British Navy. Deducting that item, the merchant tonnage turned out in July reached the respectable figure of 38,400 tons. The new contracts booked during the month, aggregating not much, if anything, short of 60,000 tons, were all for merchant tonnage. It is remarkable how many of the new contracts booked during the last two or three months are for cargo boats of the ocean tramp order. One would have supposed that there is not much temptation to go into that kind of property just now, but ship owners as a class go on investing their surplus capital in new shipping. It is a way they have—just as a manu-

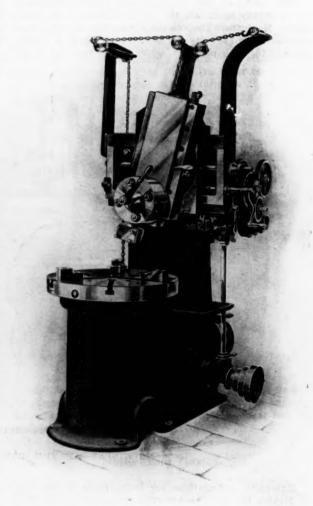


Fig. 2 .- The Bullard Boring and Turning Mill.

MACHINERY AT THE PAN-AMERICAN EXPOSITION.

facturer goes on extending his factory out of accumulated profits. For two or three years shipping property has been remunerative, and not only that, but during the period foreigners have been such eager buyers of ready vessels that British ship owners have been able to weed out more or less old and wave worn craft at a large profit on the book valuations. With the great rise in building material last year second-hand ships rose to a premium, of which our ship owners largely took advantage. Then they waited until costs should come down, and now they are reinvesting their money. And, of course, the regular lines have to keep on replenishing their fleets whether the times be good or bad.

Whatever may be the ultimate effect on ship owners themselves of the extensive building in progress and in prospect, the shipbuilding industry is now flourishing and is assured of a fair measure of prosperity for a year to come or more. The recent buying would seem to imply that ship owners have come to the conclusion that prices have reached bottom, although they did not get back to the level of 1897-98. Steel plates last month were not far from the lowest point, but wages both in the shipbuilding yards and the engineering shops remain at the high rates fixed when the boom began. And labor is a leading factor in the cost of production of a ship. It is not probable that wages can be, or will be, reduced when there is so much work on hand. Such has been the run of orders for cargo boats that the price is now fully 5 per cent. higher than a month ago, and several builders who make a specialty of this class of vessel are so full up that they cannot accept more orders for delivery before the end of next year. Whether the rise in prices will check the run of orders remains to be seen.

Apart from the shipbuilding industry, whose wants are soon determined and arranged for ahead, there is no special reason for any advance in iron or steel. An extension or indefinite prolongation of the strike in the United States would, of course, materially alter the situ-

up the few Glasgow dealers who had the temerity to sell short a few weeks ago when the trade was looking so sickly.

Although the home demand for crude iron has so much improved that consumers who have been for some time past buying only "from hand to mouth" are now eager to contract for forward deliveries of pigs, the foreign demand is small. Last month the total exports of pig iron from the United Kingdom were only 71,957 tons, as compared with 104,488 tons in July, 1900. The shipments to Germany and Belgium have dropped off more than one-half, and the iron industries of these countries remain in a very bad way. The continued depression on the European Continent is, of course, against any great rise in prices of iron manufactures with us. One does not hear of much German or Belgian material being offered in Scotland just now, but it will come, for German steel bars are being offered in the Midlands of England at 5 to 10 shillings under local rates, and Belgian structural steel is being offered at £1 per ton under what Eng-

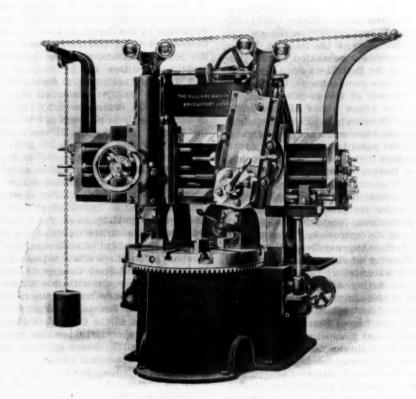


Fig. 3 .- Bullard Double Turret Head Boring and Turning Mill.

MACHINERY AT THE PAN-AMERICAN EXPOSITION.

ation, for a long stoppage of production would send American buyers here, and even a partial stoppage may send your foreign customers to us and to Germany. But the disposition here is to expect an early settlement of the labor trouble on your side, since the men are so clearly in the wrong and have such an overwhelming force opposed to them. What is thought probable is that the temporary curtailment of consumption in the United States will soon cause a glut in pig iron, out of your enormous production, and that we shall therefore witness a renewal of shipments of American pig iron to this side. Needless to say that founders and manufacturers generally are not displeased at such a prospect, which, whether it be realized or not, serves in the meantime to temper the ambition of our own smelters. The warrant stocks are so low here that Scotch pig iron would be higher than it is but for the increasing stocks in Cleveland and the possibility of the renewal of American shipments. And on the other hand, it may be said that as Cleveland iron is so cheap just now, Scotch warrants would be lower but that they are now chiefly in the hands of some London capitalists who are holding lish makers are asking. The excess production of iron and steel on the Continent will act as a drag on the British markets, just as the enormous production of pig iron in the United States will keep our smelters within bounds. And yet neither in smelting nor in manufacturing can there be much margin of profit at present.

Unrest in the Coal Trade.

There is again some unrest in the Scotch coal trade. At the the end of July expired the period for which the Joint Board of Conciliation was constituted, and also the wage scale fixed under the award of Lord James of Hereford in the recent arbitration. This week there has been a succession of meetings between representatives of the coal owners and colliers to consider a new basis. It having been agreed to renew the Conciliation Board for another six months, the employers then submitted to the board an application for a reduction of wages equal to 6 pence per day on the amount awarded by Lord James. This reduction is declared to be necessary in consequence of the low range of prices now obtainable for coal, prices averaging fully 6 shillings per ton under those current a year ago, when coal did not

rise so much in Scotland as it did in Wales and England. The large coal owners with running contracts were not very desirous of raising the wages question just now, as they would rather go on paying a higher rate than may be quite justified than risk a stoppage. But the smaller coal owners, with thin seams expensive to work, declare they are actually losing money at present prices, and that a reduction of wages is for them an imperative necessity if the market does not advance-of which there is no prospect. The demand for a reduction is, therefore, indorsed by the Coal Owners' Association, who, however, offer to keep the new rate in force until October 31 without further alterations. The representatives of the men on the Conciliation Board will not take the responsibility of accepting the reduction, and have procured an adjournment of the board until they can consult their constituents. There is little doubt that the reduction will be ultimately effected, though the negotiations may be prolonged until the end of the month.

B. T.

Harvey Royalties.

WASHINGTON, D. C., August 27, 1901.-Acting Attorney-General Beck, in a formal opinion on the law and facts, has advised the Secretary of the Navy to decline to approve a series of vouchers submitted by the Carnegie Steel Company and the Bethlehem Steel Company for royalties paid by these companies to the Harvey Steel Company for the use of the so-called Harvey process in hardening the armor plates of the battle ships "Illinois" and "Wisconsin." These vouchers represent a claim for reimbursement under a contract by which the Government agreed to repay these royalties to the steel companies if the latter "were required to pay them to the Harvey Steel Company." vouchers immediately in question cover but two ships. but represent a series embracing all the face hardened armor manufactured under the process referred to by the Carnegie and Bethlehem companies since 1893. The facts in this interesting controversy, together with the substance of the Acting Attorney-General's opinion, are set forth in the following official statement prepared by the Department of Justice:

"The opinion of the Acting Attorney-General contains a full statement of the contract relations between the Government and the contractors, and sets forth that on April 12, 1893, the United States made a contract with the Harvey Steel Company by which the Government acquired the right to use the inventions described in the Harvey patents by paying a royalty of 1/2 cent a pound upon the finished plates. Subsequently Admiral Sampson, then Chief of the Bureau of Ordnance, advised the Navy Department that no further royalties should be paid, as the process used by the Government, through its contractors, in the construction of armor plate, was not the same as that covered by the Harvey patents, and for the additional reason that the Harvey patents were invalid for want of novelty. On this recommendation Secretary Herbert, in 1895, refused to pay further royalties.

"In 1897 the Carnegie Steel Company and the Bethlehem Steel Company took out a license from the Harvey Steel Company to use their process in the face hardening of armor plates, and the contract stipulated that the steel companies were under no obligation to pay any royalties whenever the Harvey Steel Company had previously granted a license to any government, and the royalties provided by said license had, in fact, been paid by such government. The agreement further stipulated that the steel companies should submit an adverse decree for an alleged infringement of the Harvey patents, and the issuance of an injunction to restrain them from the use of the process, except under this license. Suit was commenced in the United States Circuit Court for the Eastern District of Pennsylvania and a decree entered as stipulated in the agreement. Subsequently the two steel companies, in 1898, made contracts with the Government for the manufacture of armor plate for the battle ships 'Illinois' and 'Wisconsin,' which provided that if the steel companies were

'required to pay royalty for the use of the face hardening process,' the Government should reimburse them, and the Harvey Steel Company then brought suit against the Government in the Court of Claims for an infringement of the patents, and the Government defended on the grounds indicated by Secretary Herbert. The Bethlehem Steel Company and the Carnegie Steel Company having paid the royalties for hardening the armor plate of the 'Illinois' and 'Wisconsin' to the Harvey Steel Company, presented a voucher for the approval of the Secretary of the Navy to secure reimbursement, and the Secretary requested the opinion of the Attorney-General as to whether he was justified in withholding his approval until the case in the Court of Claims, involving the validity of the Harvey patents, was first determined.

"The Acting Attorney-General, in the opinion just sent to the Secretary of the Navy, advised him that he is justified in withholding such approval. The opinion says:

says:

"'The Government contends that the process employed in hardening these armor plates is not covered by the Harvey patents, and, in the second place, that the patents are invalid. If the only question were as to the validity of the patents, it could be urged with some force that by the license of March 24, 1897, the Carnegle Company are stopped from disputing the validity of the Harvey patents, and are therefore "required" to pay these royalties.

'It is not necessary to decide this question at this time, for if the first contention of the Government be sound and the process used by the Carnegie Company in hardening these plates is not the process covered by the Harvey patents, then it would not be the subject of the agreement of March 24, 1897, and the Carnegie Company were not "required" to pay royalties thereunder. This is the very question at issue in the pending litigation between the United States and the Harvey Company, behind which latter company the Carnegie Company stand as beneficial plaintiff to the extent of the royalties paid by them, for the Carnegie Company are "subrogated to the rights of the Harvey Steel Company for the amount of such royalties," and the Harvey Company, "on the written request and at the expense of the Carnegie Steel Company, Limited," must commence and prosecute with due diligence a suit against the United States to recover the royalty due under the said Government license, and must pay over the royalties thus recovered to the Carnegie Company. Whether recovery is sought in the pending case in the Court of Claims for the particular royalties for which you are now asked to approve a voucher is not important. The question involved is the same, and if the Harvey Company be successful in this suit, and the royalties comprised in the disputed voucher be not recoverable in the pending suit, the Harvey Company are obliged to bring a new suit for such royalties for the benefit of the Carnegie Company, and the prior decision would unquestionably be controlling. It is obvious, therefore, that to pay these royalties is not merely to prejudice the question at issue in the present litigation, but in effect to concede the entire claim. In my judgment, therefore, you are justified in withholding your approval of this voucher.

"'It is evident that the Government desires to have the question of the validity of the Harvey patents, and the exact process covered by them, judicially determined, and it should not be defeated in this purpose by the ingenious agreement into which its contractors and the Harvey Company entered. I therefore adhere to the opinion previously expressed that you are justified in withholding such approval, to the end that the questions involved may be judicially determined."

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The annual report of the Interstate Commerce Commission for the fiscal year ended June 30, 1900, just completed, shows the total mileage of railways in the United States at that date to have been 193,345, an increase of 4051 miles for the year. In 1890 the total railway mileage of the country was 163,507, and the gain in the following ten years was, therefore, 29,748 miles.

Insuring Patterns.*

BY FREDERICK CONLIN, BETHLEHEM, PA.

No single item is more in disfavor with the insurance companies that that of foundry patterns. This is largely due to the fact that in case of fire the damage to patterns, as a rule, results in total loss. If not actually destroyed they are made valueless through heat or water and generally the repair of a partially damaged pattern will cost as much as a new one. In addition to this there is a difficulty in adjusting values. The bone of contention is the question of depreciation. A pattern which has cost many hundreds of dollars may be obsolete, or after having been used once may never be brought into service again, and is of no value, the cost of its production having been charged to the cost of making the casting. Other patterns may have been in use for a long time and be subject to heavy depreciation charges. The pattern which was worth the cost of production last month may suddenly become obsolete and valueless. This rapid fluctuation between a useful tool and a piece of scrap wood illustrates the difficulty of adjusting losses, the element of cost being almost entirely that of labor, which is absolutely lost when the pattern is "scrapped."

The value of the active pattern is the cost at which it could be replaced in the open market. It is a peculiar fact that patterns representing the very essence of a foundryman's business are a less tangible asset than the scrap iron heap. There is no foundry asset so susceptible of fluctuation and difficult of valuation, and at the time of loss so liable to suffer from the adjuster's depreciation charges, &c., as that of patterns.

An important law decision defines patterns as tools. The plaintiffs were manufacturers of machinery and kept wooden patterns to make the iron castings needed for the machines. The policy insured their fixtures, movable machinery, engine, lathes and tools, and it was held that the parties intended to include patterns in the word "tools" and that the policy covered all patterns which from their size and shape admitted of being applied and managed by the hand of one man. The underwriters were no doubt influenced by this decision, as they at present stipulate that if patterns are included in a general policy they must be specified in a separate item and a fixed amount stated as the limit of the risk assured on them. It is further required that the figure given must not exceed 10 per cent. of the amount of the policy. Under certain favorable hazards the limit is sometimes increased to 20 per cent. This is, however, exceptional.

Views of Insurance Officials,

An insurance official in discussing the question of patterns expressed the following opinion: "The temptation to show a high value upon obsolete patterns is too great for some men, and as a result insurance companies are frequently asked to pay high prices for patterns after a fire which were considered of trifling value before the loss. This is not a reflection against foundrymen generally. We base our estimates upon, say, 1000 losses, and it takes but a very few individual fires where excessive claims are made to raise the average loss to a figure much above what we consider normal. This brings in the question of moral hazard, which insurance companies are obliged to consider in connection with the risks which they assume. Again, as a rule, pattern shops which are extra hazardous are generally in close proximity to the place where patterns are stored. This adds considerably to the risk. Patterns should be stored apart from the pattern shop and if possible kept in detached buildings."

Another high authority gave the following views: "In considering insurance risks the rates are based upon the average loss of, say, 1000 fires. The averale appraisal of loss runs less than 50 per cent. of the amount of insurance. If the underwriters should figure upon the basis of a total loss the present rates would be much higher. The trouble with a pattern, from an insurance

company's standpoint, is that there is rarely any salvage. Hence, when we have a loss with patterns, it is a heavy one and way beyond all proportion to the percentage of loss on the balance of the other classes of property unsaved. In other words, there is no salvage to a pattern loss, while with ordinary merchandise it is sometimes surprising how much we recover from goods which have been in a litter covered with rubbish and ashes or soaked with water."

"In practice, where the assured is inclined to be fair and meets us half way, it is rare for us to have a serious dispute as to these matters; we generally get together and settle the question without much loss of time."

Another official of a prominent insurance company gave the following definition of obsolete patterns:

"An obsolete pattern is one not liable to be used, and if the foundryman cannot show by his books that a pattern has been used in, say, five years' time, we consider it obsolete. The fact that a foundryman has put such pattern away and given it store room has no bearing upon its value. We store from time to time numerous papers and documents which we never expect to be obliged to refer to, and yet we give them house room, having in mind the faint possibility that we may want to refer to them. The fact that we store these papers away does not make them valuable. I do not consider a pattern obsolete if you can take me to a casting made from it and show me that such casting is in use. All active patterns for castings in general use, articles of commerce, recognized as staple merchandise, in fact for any casting which would have a market value as a manufactured article, should be classed equal to new or cost of reproduction."

The insurance companies have striven to influence legislation so that the assured assumes the responsibility of fixing the amount of policy which has no bearing on the amount of payable loss. It is not until the loss occurs that the insurance company takes up the question of valuation.

The underwriters claim that it would not pay the insurance company to fix the values on patterns or any other class of property, as this would entail the employment of an expert at, say, \$25 per day to go and make such valuation. This expense would be more than equal to the insurance premiums received. Besides, the value of the patterns at the time of insuring would not be identical with their value at the time of the fire. The insurance company will not accept without question the foundryman's valuation, and in case of loss, if the amount warrants the expense, the opinion of an expert is obtained to determine if the claim for loss is excessive.

Insurance policies usually include a clause which stipulates that in case of loss, if the insurer and assured fail to agree upon an adjustment, the matters in dispute shall be submitted to arbitration and in case the parties voluntarily proceed to settle their disputes in this way, the court will enforce the award when so made. In case, however, the assured is not willing to arbitrate, any dispute becomes a question for the court to decide. The insurance companies as a rule taking their time in law suits, the adjustment of a claim this way is seriously delayed and it is found perhaps more advantageous to effect an early settlement by arbitration. In such case the underwriters will, for their own credit, appoint a firstclass man and the assured will, of course, make the best selection he can. By these means the final decision is usually a fust and equitable one.

The records show that the insurance companies contest from 1 per cent. to 2 per cent. of losses incurred.

It is a peculiar condition that while insurance officials object very much to the "valued" policy in a general way, a number of them favor the adoption of its principles in the question of insuring patterns. As one worthy president of a prominent insurance company puts it: "We would much prefer to take the foundryman's idea of the value of patterns before the fire, rather than after it. His ideas are generally more conservative as to value at the time of taking out policy, having the premium to pay. If the insurer should have a schedule of his patterns made out, putting a value upon each pattern and attaching such schedule to the insurance policy, we would be more inclined to accept the valuation

^{*} A paper read before the Foundrymen's Association at Buffalo.

given in such schedule than under any other method of adjusting pattern claims."

In practice it is not advisable for the assured to issue a schedule of patterns and prices to be attached to policy as there are so many changes liable to exist among the patterns, new ones taking the place of old ones, &c. The foundryman would not have the margin of "give and take" in adjusting such matters if each pattern insured was scheduled any more than if he should go by the exact schedule of his general inventory taken at the time of issue of policy. Such schedule would be radically changed, although the actual total value of property might not show much variation at the time of loss, in comparison with the amount of insurance agreed upon.

In case of casualty the insurance company are under contract to either reproduce the articles lost in as good a condition as they were before the fire or to refund in cash the cost of their reproduction. The value is based upon the market selling price at the time of loss. The law holds that if the property does not command a ready market, the price which it would bring at a present sale would not be considered a fair criterion of value, but the cost required to replace it in its condition before the fire would be considered the true value. Accordingly any pattern in active use and fit condition for molding, producing a satisfactory casting, is as good as a new one and worth as much.

Valuing Patterns.

Probably the most systematic method of establishing the true value of patterns to be used as an inventory for figuring up the firm's assets, or to serve as a schedule giving a true record of patterns at the time of fire, is to keep a pattern book in which should be recorded the name and number of each pattern, its cost, or value, all entered in columns under classified headings of active, active worn, semiactive, emergency and obsolete. Every pattern broken up or rendered worthless to be taken from such schedule, every new pattern added to be entered. Patterns which might be safely considered as obsolete should be charged off. This classification is to be made upon some fixed basis.

The following may serve to suggest the general classification of the various patterns in regard to their durability and earning power. There should be no depreciation charged against an active pattern. To be useful it must be kept as good as new, as it is a most unprofitable policy to work with patterns in any other than the best possible condition. Patterns classed as active worn are those which are not sufficiently worn to be considered out of service.

The active worn pattern should be determined in accordance with the wear and probable extent of durability. The foundryman's judgment must be relied upon in classifying, but a 50 per cent. depreciation should be charged off, in case the pattern should be considered sufficiently worn to warrant its transfer from the active list. In making up the valued schedule the premium to be paid on the amount of risk will tend to make the classification come well within conservative lines.

The customers' patterns should be considered active. If service is liable to be required at any time, the semiactive pattern is worth cost of a new one, as its earning power would be the same as if new. It is, however, advisable to deduct a fair depreciation from a pattern of this class, say 15 per cent. per annum, as with the rapid development in all mechanical pursuits the patterns of to-day are liable to be obsolete in from five to ten years. If, however, the pattern is one which has been made for a certain part of machinery in service, but only required for use in case of breakdowns, such pattern should be classed as "emergency" and be charged with depreciation according to its durability and earning power. To establish a fixed basis for valuation the rate charged off should be 25 per cent. per annum.

If a pattern has been made to fill a customer's order for castings, notwithstanding the fact that this item of its cost has been considered in the charges for the casting, and provided the ownership of such pattern remains with the foundryman, it should be considered an asset.

regardless of the conditions under which it was made, and if either active, semiactive or emergency, it should be entered and considered upon its classified basis of valuation without discrimination.

When the casting made from a pattern is not liable to be put to further service, or if the pattern is for a machine or a portion of one which has been thrown out of service and abandoned, such pattern is useless and obsolete.

Obsolete patterns which could be applied to other uses than those for which they were originally intended should be considered as of little or no value, as they would require more or less altering before available and are "dead wood" until brought into active service

An active pattern may pass into semiactive, if the demand for its use falls oh, and it may eventually become obsolete, if found of no further service, although its condition may be good. An annual survey would determine all this and lead to a revision of the schedule, but if in the interval a fire should occur the face value shown by this schedule should be accepted as shown.

These principles apply equally well for insurance regulation under either "standard" or "valued" forms of policy.

Customers' Patterns.

In regard to customers' patterns, unless there is a special clause in the policy whereby the insurance company agrees to cover and include in its risk "the patterns held by the assured, the property of o.ners, for which the assured may be responsible," the customers' claims will not be recognized by the insurance company. The insurance company insure the owner of the goods and not the goods, hence the question of ownership is of vital importance in the settlement of a loss. No one can insure that which he does not own or for which he is not responsible.

If a customer sends his patterns to a foundry to be used for making castings and there is no specific guarantee given by the foundry assuming responsibility for such patterns, the foundry does not become liable for the loss in case of fire. The insurance companies hold that you cannot make a contract for them and they do not agree to insure the customer's patterns unless there has been a special arrangement assuming the responsibility for such patterns, and the policy issued to the foundryman does not accordingly cover the property. The law holds that where the property is held for the benefit of both bailor and bailee, or, in other words, customer and foundryman, it is reasonable to expect ordinary care from a man of ordinary prudence. If upon the request of the bailor or customer for his property, the foundryman states that he cannot make delivery of the property as it was destroyed by fire, then to recover it will be necessary to show that such fire was due to the foundryman's negligence. The burden of proof is on the customer to show that it was due to negligence on the part of the foundryman before the responsibility can be fixed. The various legal quicksands in the question of protecting the customer's patterns make it advisable to have the customer insure his property in his own name, distinct and clear from the insurance policy taken out by the foundry. By the customer taking out a policy for the patterns in his own name all questions as to the title of his property would be carefully defined and he would not run the risk of the foundry failing to come under the average clause. The customer can insure his patterns to their full value and the insurance companies would, under the circumstances, accept the risk without including insurance on other property; thereby, in case of loss, the customer is in a much better position for readily adjusting his claims.

The customer's patterns when held by the foundryman are similar as a fire risk to the conditions under which the marine policy serves. They are held by, and subject to, the control of others, and the policy should have valued schedule attached, as all the patterns sent to a foundry for use must be considered "active" and of value equal to the cost of replacing.

The transfer of patterns via railroad or other common carriers need not involve the question of fire insurance, as it is a part of the duty of the common carrier to assume this risk for the owner. When the shipment is accepted in good order the transportation company agree for a consideration to deliver the goods in like condition at stipulated point of delivery.

The insurance companies generally admit that in case of destruction of patterns by fire they have no fixed basis of adjustment of a loss nor method of charging off for depreciation. They proceed to make settlement upon the most equitable basis between the assured and themselves. It would be of great advantage if an established basis of valuation could be predetermined by both parties. The foundryman insures according to his ideas of value; frequently the adjuster's deductions in case of loss cut a wide margin from the item in policy covering patterns. The amount of premium which the foundryman has been paying based upon his valuation has been probably duplicated for many years.

An established system of valuation would have saved this excessive outlay, the insurance companies having received more premium than actually due them through such overvaluation. The opinions expressed by a number of influential insurance officials indicate that the underwriters would co-operate in formulating and adopting some fair and equitable basis for appraising the value of patterns, such valuation to hold good in the adjustment of claims for loss.

The New Port Oram Furnace.

On the 15th inst. the new blast furnace at Port Oram, N. J., was blown in, it being located in close proximity to the Port Oram Furnace, itself a modern stack, occupying the place of an old furnace, some of whose remains are still standing. The property is owned by Joseph Wharton of Philadelphia. Although he was 75 years of age on March 3, 1901, and has vast interests in other undertakings, Mr. Wharton has given his personal attention to every detail, watching the progress of work during weekly visits to the plant, which is under the management of Edward Kelly. No expenditure was shunned to make the furnace a model plant, and we understand that preparation has been made in the building for a second stack.

The undertaking is regarded as particularly significant, since it proves that an ironmaster of long experience is convinced that with the local ores and with Connellsville coke as a fuel it is possible to make pig iron profitably in New Jersey. Mr. Wharton owns extensive mineral property at Hibernia, having acquired control of all of the famous old mines of that district. We understand that the whole mining system has been modernized, and that it will be handled automatically from the stoke to the furnace top. The ore will be crushed in very large rock breakers and will be screened to sizes. The lump ore is to be treated in a newly invented magnetic cobbing machine, separating it into furnace lump, which goes direct to the furnace, and into mill ore, which is delivered to a mill for fine crushing and magnetic separation into concentrates and sand. A short link of two miles remains to be built to complete Mr. Wharton's railroad connecting the mines with the two furnaces, the new one and the old one.

The furnace plant itself was built by Frank C. Roberts & Co. of Philadelphia. The furnace is 100 feet in hight, has a 21-foot bosh and a 14-foot crucible. The diameter of bell is 11 feet. It is equipped with four Roberts hot blast stoves 22 feet in diameter and 100 feet high.

The particularly interesting feature of the plant is that all the magnetic ore is to be roasted. The furnace has a battery of 36 gas fired roasting kilns, the ore being drawn from four ore bins with a storage capacity of 2000 tons. Gas is furnished by three Talbot producers. After being roasted the ore is dumped into skips, and is like all the stock discharged automatically into the furnace. The coke, which is chiefly drawn from Mr. Wharton's own plant in the Connellsville region, is stored in four bins of a capacity of 500 tons.

The furnace is blown by two pairs of Southwark horizontal disconnected compound condensing blowing

engines with 42-inch high pressure and 84-inch low pressure cylinders, 84-inch blowing tubs and 60-inch stroke. The iron is cast by a Uehling machine.

The capacity of the former is 400 to 450 tons per day.

Striking Machinists and Molders Enjoined at Chicago.

The Allis-Chalmers Company, Chicago, have appealed to the United States court for the protection of the men employed by them to take the place of striking machinists and molders. As previously stated, the International Association of Machinists are concentrating their energy on a few establishments, one of them being this company. Their shops in Chicago are being constantly picketed and the strikers are beginning to resort to violence to compel nonunion workmen to refrain from working for the company. At the same time their molders and pattern makers are on a strike and are actively engaged in eudeavoring to prevent others from taking their places. The interference of the pickets has become so annoying that on the 23d inst. the company presented a petition for an injunction to Judge Kohlsaat of the United States court, who directed the issuance of an order restraining strikers from picketing the shops and interfering with the machinery of the complainant company. This writ is to remain effective until the court has opportunity to decide whether it should be permanent. On August 28, Wednesday, Judge Kohlsaat will set a date for the hearing of arguments on this point. The injunction is directed against the International Association of Machinists, the Iron Molders' Union of North America, the Pattern Makers' Association and the various officers and members of those organizations.

The motion for the injunction requested that the striking molders and machinists shall be enjoined from "a continuous and persistent picketing of the shops and plant of the Allis-Chalmers Company, accompanied by the incidental 'slugging' of nonunion employees and otherwise interfering with the operation of the company's plant." Affidavits were submitted relative to a number of assaults, and the restraining order was immediately granted.

The machinists' strike has been on for 12 weeks and the injunction is designed to protect the men taking the places of strikers against brutal treatment at the hands of strikers, which W. J. Chalmers declares they have experienced during that period. On Thursday night five men employed at the Allis-Chalmers plant, he says, were assaulted and beaten by strikers. Concerning the matter Mr. Chalmers said to the reporter for a Chicago daily paper:

"It is seldom, I believe, that manufacturers appeals to the United States courts, but our attorneys took this strike matter before the United States court to see if we could not get relief. Our injunction restrains the various labor unions and associations, their officials and members and all those in any way connected with themefrom interfering with our men.

"We have had no one arrested for assaulting our men. It seems to be of no use. These men are protected in a way. A few days ago a number of pickets were arrested and arraigned before a Justice of the Peace. There was nothing much done. We can do nothing in this way. It seems that some power protects those who attack men that take their places when they strike."

(By Telegraph.)—The National Founders' Association are making steady gains in starting foundries in this city. The old force of another large foundry returned to work this morning without any conditions, fearing their places were in danger of being filled with outside molders, some having already been engaged. Molders are being received in good numbers from other cities, and they are not being molested by the strikers. Progress is also being made in filling the places of striking machinists. The striking machinists are not regarding this movement calmly, but are resisting it vigorously, and a few cases of violence have occurred during the week. The injunction issued by Justice Kohlsaat is having a good effect, as many are being restrained by it from taking aggressive action against the new men.

The Shelby Steel Tube Company.

The application of the United States Steel Corporation to the New York Stock Exchange to arrange for the listing of \$1.012.200 additional preferred stock and \$1,201,900 of common stock shows that there are to be exchanged one share of United States Steel Corporation preferred stock for two and two-third shares of Shelby Steel Tube Company preferred stock; one share of United States Steel Corporation common stock for four shares of Shelby Steel Tube Company common stock. The capital stock of the Shelby Steel Tube Company consists of 50,000 shares of preferred stock and 81.515 shares of common stock. In exchange for these there are to be issued preferred and common stock of the United States Steel Corporation at the rates above mentioned-viz.: For 50,000 shares of Shelby Steel Tube Company preferred stock there are to be issued 18,750 shares of United States Steel Corporation preferred stock; for 81,515 shares of Shelby Steel Tube Company common stock there are to be issued 20,378 shares of United States Steel Corporation common stock.

There have been already delivered for exchange 26,994 shares of Shelby Steel Tube Company preferred stock and 48,079 shares of Shelby Steel Tube Company common stock, for which there have been issued and delivered 10,122 shares of United States Steel Corporation preferred stock and 12,019 shares of United States Steel Corporation common stock.

The Shelby Steel Tube Company were incorporated under the laws of the State of New Jersey, in February, 1900, and have acquired among others the plants and businesses of the following companies, chiefly engaged in the manufacture of seamless tubes for bicycles, steam boilers, &c.:

United States Cold Drawn Steel Company, Cuyahoga Falls,

Mansfield Machine Works, Mansfield, Ohlo.
Garwood Seamless Tube Company, Garwood, N. J.
United States Projectile Company, Brooklyn, N. Y.
McCool Tube Company, Beaver Falls, Pa.
Driscoll Tube Company, Auburn, Pa.
New Castle Tool Company, New Castle, Pa.
Ellwood Weldless Tube Company, Ellwood City, Pa.
Greenville Tube Company, Greenville, Pa.
Shelby Steel Tube Company, Shelby, Ohlo.
American Weldless Tube Company, Toledo, Ohlo.
Albany Tube Company, Albany, Ind.
Pope Tube Company, Hartford, Conn.

The company have no outstanding bonds, or mortgages or liens upon any of the property.

The following is the balance sheet as appeared from the books of the company on April 1, 1901:

	93,556.78 683,669.73	Inventory: Supplies
\$908,392.53	264,245.00	Cash Accounts receivable Notes receivable
458,792.07	40,160.60	
\$1,367,184.60		Total quick assets Permanent assets:
	\$2,525.12	Real estate
	17,183.76	Buildings
	156,387.15	Machinery and equipment
	10,952.40	Tool account
	2,128.36	Furniture and fixtures
	285.00	Horses and wagons
	211.82	New York warehouse
	60,829.34	Construction and improvement
	2,355,559.80	Original purchase1
12,606,062.75		-
13,973,247.35		Total assets
8400 000 400		Accounts navable
\$138,975.46		Accounts payable
300,000.00		Notes payable
100,744.97		Common stock
8,151,500.00		Preferred stock
5,000 000.00		Surplus account at Pohymans 1 1004
173,847.29	* * * * * * * * * * *	Surplus account at February 1, 1901
108,179.63		Surplus for two months

mon stock \$507,675,300. The committee has further directed that there be added to the list from time to time \$862,800 additional preferred stock and \$835,000 additional common stock, on official notification that the same has been issued in exchange respectively for preferred and common shares of the Shelby Steel Tube Company, making the total amount authorized to be listed under this and previous applications \$510,361,300 preferred stock and \$508,511,200 common stock.

The Pennsylvania Engineering Works.

At a recent meeting of the stockholders of the Pennsylvania Engineering Works, New Castle, Pa., it was voted to increase the capital stock \$75,000, this amount to be used in making betterments to the plant and additions to the equipment. The improvements will consist of new machine shop 90 x 140 in dimensions as a continuation of the present constructing shop and to take the place of the old wooden structure now standing between the erecting shop and the foundry department. The new shop will have in addition to the ground floor area, 90 x 140, galleries running along the two sides, 16 feet wide, on which will be located the tool room and some of the smaller tools. The shop will be equipped with a 30-ton electric traveling crane, new planers, lathes, shapers, drill presses and other machinery of the most modern and improved designs. The gallery on the south side of the machine shop is to be made 22 feet wide for a distance of 80 feet to accommodate the pattern shop, thus doing away with the old wooden structure used for that purpose. It is also necessary to move the old pattern shop to make room for the new battery of boilers to be installed, to provide the required amount of steam. A new 150-kw. generator will be installed to furnish electric power for the cranes and fan motors, together with the electric lights. At present the plant is running a 75-kw. generator, and this will make reserve for the plant in case accident occurs to the new one. The boiler shop is to be made more effective by the installation of a powerful combination punch and shears, with the throats sufficiently deep to punch a 6-inch hole in the center of the widest plate rolled. The new improvement, when completed, will represent an outlay of \$100,000 and will put the Pennsylvania Engineering Works on an equal footing with their leading competitors, who have now more modern shops. The new work outlined conforms to the liberal policy contemplated and planned when the property was first purchased from the New Castle Engineering Company. The officers of the company are: President, George Greer; vice-president, Edward N. Ohl; secretary and treasurer, Edward King. The official organization at the works is made up as follows: Edward King, general manager; E. W. Beadel, chief engineer; J. M. Watson, superintendent, and Charles L. Baldwin, purchasing agent.

The Wallace Machine Made Machine Keys.

The Wallace Supply Company, 56 Fifth avenue, Chicago, have greatly increased their facilities for the manufacture of machine keys by machinery. These keys, being produced by machinery, are of uniform size and taper, are free from scale, and require very little filing, in many cases being found to fit with no filing whatever. The company claim that by their process they secure perfect uniformity in taper, which is something that cannot be attained in hand made keys. The machine made keys are also free from hammer marks and scales, which will save filing and labor in fitting. Another point in favor of these keys is that they can be had at a much lower price than hand made keys. The company have issued a circular descriptive of the great variety of sizes carried in stock with which is included a price-list.

About 7000 of the recent order of 10,000 steel cars placed by the Baltimore & Ohio with the Pressed Steel Car Company of Pittsburgh have been delivered and the other 3000 are being turned out at the rate of about 65 cars per day. The greater part of the order is for gondola cars.

The Iron Age

New York, Thursday, August 29, 1901.

OAVID WILLIAMS COMPANY, - - - - - PUBLISHERS.

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GEO. W. GOPE, - - - - - - - ASSOCIATE EDITOR, CHICAGE

RICHARD R. WILLIAMS, - - - - - - HARDWARE EDITOR.

JOHN S. KING, - - - - - - BUSINESS MANAGER.

The General Monetary Situation.

The London financial correspondent of a New York paper, who has been pretty constantly predicting monetary stringencies, and was especially confident a couple of years ago that the South African war would cause great trouble in the commercial world by cutting off a good part of the supply of gold, is forced to admit that the supply of money in London is large, the amount of loanable capital is ample, and that English financiers are not now looking for dear money before the end of the year. This is very significant in view of the repeated predictions from this source of tight money, due, incidentally, to many causes, but primarily to the requirements of the British Exchequer and the interruption of the supplies of new gold.

The supply of money in France is evidently large, as is indicated by very considerable French investments in other countries. It is not uncommon for France to have a good deal of money employed in the London market, but according to the English writers the amount this year is much greater than ever before, and it is notorious that large sums of money have been sent to Germany for investment, and though France has recently taken a Russian loan, the supply of French capital shows no signs of exhaustion. Germany has suffered heavy losses in the commercial crisis that has been prevailing for two months at least, and may be said to have lasted longer. But the last dispatches from Berlin indicate that the alarm is over; there is plenty of money in the strong banks, and Germany has the means as well as the occasion for unusually large purchases of foodstuffs from this country, a circumstance that will add to our supplies of currency, whatver inroads it may make on the accumulated wealth of Germany.

As to the interruption of the gold supply, it is interesting to notice that our own country has \$160,000,000 of gold more than it had two years ago, six national European banks hold \$220,000,000 more gold than they did then, which is offset to the extent of but little more than one-half by the decrease in the Imperial Bank of Russia, and as this decrease was the result of redeeming paper money and establishing the gold standard, it has not in the least depleted Russia of money worth its face in gold.

The demands of the West upon the East for money to move the crops last year were less than expected, partly because of the organization of national banks under the law of March 14, 1900, but very much more on account of the real increase of capital in the West, as shown by the growth of deposits. That increase of Western wealth is still more conspicuous this year, and while these banks employ a good deal of their funds in New York, and by withdrawing them might cause inconvenience here, yet nearly all the Western banks are holding more money than they were a year or two ago, so that while there is little indication of a European demand for money, but rather that Europe will have to send more money here for grain, the Western and South-

ern demands for money during the crop moving season are more likely to be less than usual than they are to outrun previous experience.

The Southeastern Railway and the American Syndicate.

At a shareholders' meeting of the Southeastern Railway, held in London a few days ago, Cosmo Bonsor, M. P., chairman of the company, made known the terms of a startling proposition from a responsible American syndicate, which is in effect that it will lease the line and all its appurtenances and give a bond of \$5,000,000 as a guarantee to pay the shareholders 3 per cent, on the capital of the line and increase this to 5 per cent. during the term of the lease. This offer followed the announcement that the company's business for the past year showed a deficit, and that not only could no dividends be paid, but the board found it necessary to ask for authority to issue £1,000,000 common and preferred stock and £666,000 debenture bonds. It is not surprising that these features of the report called out some sarcastic comments on the management of the line. One of the leading stockholders remarked that "if we had built a railroad over the Sahara Desert, we should have been receiving a 10 per cent. dividend for years, but because we have built a line from London, the heart of the universe, to Paris, Berlin, Vienna and practically the rest of the world, we are told to-day, after 65 years' working, that we cannot pay any dividend at all." This does not need Artemus Ward's footnote, "this is writ sarcastical," to explain its meaning. From the report of the meeting which we find in the London newspapers, it does not appear that the American proposition was accepted, but one of the leading stockholders has taken the matter up and tells the public through the Daily Mail that it will have to be considered on its merits and acted upon.

That the offer of the American syndicate is made in good faith is not open to doubt. A bond for \$5,000,000 is a very substantial guarantee, and quite beyond the capacity of light weight adventurers. The people making the offer have had the line critically examined by experts and have reached the conclusion that it is a property capable of almost unlimited development "if properly managed." How they would manage it does not appear from anything they have thus far given the public, but that they would Americanize it is quite certain. They want a 40-year lease and evidently see their way to make the road a dividend payer from the outset, as they expect to perform the obligations of their lease without impairing the security put up at the outset.

This is a bold and even fascinating experiment in railway enterprise which is strikingly and characteristically American. To offer to take an old established line of this character out of the hands of the company who have not made it profitable, reorganize its system throughout and run it on the plan which has made some of our American railroads largely and uniformly profitable, would require excellent nerve, but that the people making the offer have all the nerve required is indicated by the readiness shown by them to give substantial guarantees of their financial responsibility. Before they had gone far in their scheme of reorganization they would have the English railroad managers applying to the courts for a commission de lunatico inquirendo for these rattle brained strangers who were showing them how British car capacities and train loads could be doubled and that at lower rates than the present average charge for freight haulage and passenger carriage the

old Southeastern could be made to set the pace for the whole field. There are railroad men in this country who would have more than \$5,000,000 worth of excitement out of such an experience, and they are not men who lose money for themselves or their friends in railroad operations.

Petroleum as an Object Lesson.

The State of Texas has probably taken the lead in matters pertaining to anti-trust legislation. Its statutes have been made so stringent that men engaged in what other States consider legitimate commerce by strictly legitimate means have had to give Texas a wide berth to escape arrest, fine and possible imprisonment. Demands have even been made for the extradition, as fugitives from Texas justice, of the executive officers and directors of industrial combinations existing and doing business in assumed violation of the anti-trust laws of that State, but in strict conformity with and by authority of the laws of other States less deeply bitten by the tarantula of populism. Probably the most active measures in trust prosecution have been taken against the Standard Oil Company, who, in the estimation of the average Texan legislator, are the incarnation of all that is evil and contrary to public policy. It will probably be recalled that within a few weeks an oil company doing business in Texas barely escaped criminal proceedings against them by filing affidavits to the effect that they had no connection with and were not a part of the Standard Oil Company, "or of any other trust existing and doing business in violation of the statutes" of the sovereign State of Texas, enacted for the protection of its people from the wrong and oppression for which trusts are organized.

But it is beginning to dawn upon the citizens of Texas, or at least of such part of it as lies within or contiguous to the new oil belt, that unless they are prepared to do business with the Standard Oil Company they will have to have an oil "trust" of their own. Production has so far outrun the ability of the producers to handle, store, barrel or sell their oil that crude is now offered by some of the smaller companies at 7 cents per barrel. Every day further complicates the situation by the "coming in" of new gushers. The last of this class of producers to come in has an 8-inch tube, and its production is a source of great joy and added embarrassment to the Spindle Top oil men. From the viewpoint of the Texas oil boomer it looks as if the foundations of the under world had been unsealed and were preparing for an oil deluge. Thus far the oil output of that State has not been very large, measured by that of the older fields. Indeed, it is relatively small and unimportant, and if every Texas well stopped flowing and every pump sucked air, no disastrous consequences would result except to the stockholders of the local companies. The report of the Unites States Geological Survey for 1900 shows that the petroleum production last year in this country was 63,362,704 barrels of 42 gallons, divided as follows:

Ohio	
West Virginia	16,195,675
Pennsylvania	
Indiana	4.874.382
California	4.099,484
New York	1,300,925
Texas	

Among the foreign producers of petroleum only Canada and Sumatra fall below Texas in the 1900 table.

But for a community without facilities or experience, lacking the capital to build storage tanks, pipe lines and refineries and inadequately supplied with railroads. even 836,000 barrels of crude oil output is a problem of a very serious nature. Those most heavily interested in the business are reaching the conclusion that their only salvation is "to put the whole management of production and distribution in the hands of one large corporation with the capital to build pipe lines and make markets all over the world." To this view everybody in interest seems to be coming; but whether to deal with and through the Standard Oil Company, who were the outgrowth of similar conditions existing elsewhere and enjoy the reputation of having been fairly successful in their management of the business, or to have a trust of their own, which in a small way shall endeavor to do exactly what the Standard Oil Company have been doing for years, is not yet decided. The first step in the direction of a common sense view of industrial organization was the recognition of the fact that the business has outgrown the capacity of the small companies to handle it profitably in a competitive way, and that under existing conditions the limit of business enterprise is found in fixing things so that no one can make any money out of oil. Having familiarized this fact, it only remains for the Texas oil producers to do what the producers in nearly every line and in nearly every part of the United States have done, and in substantially the same way, if they can.

But can they? To organize a company large enough and strong enough to handle the already large and steadily increasing output of the Texas oil field will require a large capital, and this can be secured only with the co-operation of strong banking alliances in the North. It is doubtful if anything in the shape of a consolidation of the competing oil interests of that State, admitting as it must of classification with the trusts, which Texas has for some years made the special object of partisan attack, would be regarded by Northern bankers as an attractive proposition, or that they would be willing to put their own capital or that of their clients and customers at the risk which would be involved in the creation of a Texas oil "trust." To undertake this in the small way in which it would otherwise be possible to do it would be to launch an enterprise foredoomed to failure. The Standard Oil Company would like nothing better than to make life a burden for its weak kneed Texas competitor; and unless it can put up a more substantial defense than the Texas Legislature can erect by the most elaborate system of laws which could be devised, its little oil trust would stand no better chance than did Cervera and his fleet at the entrance to Santiago harbor.

Thus is Texas learning, objectively, the unwisdom of trying to regulate the earth. In ten years, or possibly in five, of wise and conservative law making it may regain a position in which it will command the confidence of capital for purposes of investment in the development of its resources along the lines of modern business organization. It is a great thing to be smart, but to be too smart is dangerous, and Texas has been much too smart in the matter of industrial consolidations.

An interesting report on irrigation has been published by the State Engineer of Nebraska, which shows that there are now in that State 3924 miles of irrigating canals, which have cost \$4,773,084 and which water 1,698,831 acres of land. One mile of canal irrigates 433 acres and the cost of a mile of canal is \$1216, making a cost of less than \$3 per acre. As the average increase in the value of the irrigated land is estimated at \$10 per acre for the whole State, the profitableness of irrigation is very clearly demonstrated.

The Steel Strike.

(By Telegraph.)

PITTSBURGH, PA., August 28, 1901.—The official statement issued by the American Tin Plate Company to the effect that no negotiations were on with the Amalgamated Association for a settlement of the strike and that the men now working in the tin mill would be retained defines clearly the position of the United States Steel Corporation and shows that only a complete surrender of the Amalgamated Association will end the strike. Official denial has been made that through the efforts of third parties a conference would soon be held between officials of the United States Steel Corporation and the Amalgamated Association that would end the strike. The trouble has reached that stage, and the acts of violence have been so many, that only a complete surrender of the strikers will end the trouble. The United States Steel Corporation are paying no attention whatever to overtures emanating from the Amalgamated Association, but are going ahead, getting their idle mills started as fast as possible.

The Sheet Mills.

The situation in the sheet mills has not shown much change since last week. The American Sheet Steel Company are getting out about 60 per cent. of their total capacity in the nonunion mills in the Vandergrift district. New mills are being added at Vandergrift, and in a very short time fully 75 per cent. or more of the entire output of sheets of the American Sheet Steel Company will be made in the mills in the Kinkiminetas Valley. Attempts were made early this week to start the Reeves works at Canal Dover, Ohlo, but little progress has thus far been made, owing to the assaults made on the new men by outsiders. A part of the Ætna-Standard Works at Martin's Ferry, Ohio, is being moved to Vandergrift, and the Dennison and Dresden mills are likely to be taken there.

Tin Plates.

The American Tin Plate Company are making good progress in getting their idle mills started, in spite of the fact that the strikers have committed many acts of violence and intimidated the new men in every way possible. The Star Works, an eight-mill plant in Pittsburgh, has been started with nonunion men who are quartered in the mill. Four mills are now running, and it is intended to have the entire eight going inside of a week or ten days. The Crescent Works, at Cleveland, a six-mill plant, has also been started, many of the old men having returned to work, and the mill is running to about full capacity. Attempts have been made to start the Beaver Works, at Lisbon, and the Irondale Works, at Irondale, Ohio, but the strikers have committed so many acts of violence at both places, and have also made assaults on the men, that they have decided to ask the courts to grant injunctions restraining the men from interfering with the operation of the mills. It is likely that the Demmler Works, in the Pittsburgh district, will be started this week. An official of the American Tin Plate Company says that the Star, Crescent, Beaver and Irondale works have been put on the nonunion list, and that the Amalgamated scale will not be signed for these mills regardless of how the strike may be ended.

The Hoop and Bar Mills.

In the hoop mills the fight is over, so far as the nonunion mills of the American Steel Hoop Company are concerned. The Clark and Painter works of Pittsburgh are running full day turn and the Lindsay & McCutcheon Works in Allegheny and the Monessen Works at Monessen are running to more than half capacity. The Amalgamated have given up the fight at these mills.

The failure of the Amaigamated officers to get the men in the Carnegie mills to go on a strike, and also the refusal of the Chicago men to break their contracts, have disheartened the strikers and many of them would be glad to return to work if they could see their way clear to do so.

The Tube Works.

Fully 80 per cent. of the men at the National Tube Works, at McKeesport, who went on a strike would return to work if the mills were opened, but they fear the acts of violence that would be committed by the other 20 per cent., made up of the disorderly element. A break has been made, however, and about 200 machinists and others at the National Tube Works who went on strike will return to work on Thursday night.

There is no doubt whatever but that the strike would have been ended before this had it not been that the rank and file of the Amalgamated Association is being deluded by promises of the leaders that a settlement will be reached within a week or two on terms favorable to the Amalgamated and that all the strikers would be given their old positions. It can be stated positively that there are no peace negotiations on between officials of the United States Steel Corporation and the Amalgamated Association, and the strike can be ended only by the men returning to work.

Shaffer's Statement,

At a mass meeting of strikers held in Pittsburgh Tuesday night President Shaffer of the Amalgamated Association made this statement:

"If the United States Steel Corporation will sign the scale for the same mills for which the scale was signed last year; if they will pay the present Amalgamated scale for all mills now on strike, and if they will permit the men in nonunion mills to organize, if they see fit, the Amalgamated Association stands ready to make a settlement."

It can be safely stated that the strike will never be ended on terms given above. The Steel Company will not sign the scale for the mills that were signed for last year, but which have been started up nonunion since the strike started.

The Value of Mineral Statistics.

In an address delivered by Dr. James Douglas of Phelps, Dodge & Co., New York, before the School of Mines and Metallurgy of the University of Missouri occurs the following passage:

Statistics certainly flatter our national vanity, but are not, in so far as they consist merely of unrelated columns of figures, especially useful. Some day or other the statistical branch of political economy may be reduced to the order of a science. When this is done even mineral statistics may assist us in forecasting the future, which is one of the provinces of science, and thus in a certain sense give stability to our industrial system -if system it may be called. This will come about when we trace the industrial relations of metals to one another and to the vicissitudes of economic life. Take, for instance, the fact that the production of pig iron in this country and the increase in mileage of our railroads have almost exactly kept pace during the last 60 years, or the further fact that the production of iron and copper, taking the world as a whole, during the past half century has grown in equal proportions. If we could trace a number of such relations, we would have partial data on which to predict the activity of a given branch of metallurgy when the country is enjoying an era of prosperity, or the depression in that branch which is inevitable when railroad building and operating are in sympathy with national distress. Or in the second case, the reliance of copper on iron, for it would be impudent to reverse their relations, would help us in gauging the world's probable demand for the auxiliary metal at any one period. If there be a science of comparative statistics, and certain laws can be detected and formulated as the basis of such a science, statistics will rise from being the driest and most tedious accumulation of isolated and irrelevant figures into one of the most useful branches of economics. If you can discover a statistical fact or a statistical relation, which may help toward thus erecting statistics into a science, you will help to bridge that hitherto impassable gulf which intervenes between the exact sciences, which are beyond the range of human volition, and that still more important group of science in which man, as a sentient and willful being, seems to modify, if he does not control, the play of natural forces.

A New Standard Shape Classification.

Some of the leading Western mills, including Jones & Laughlins, Limited, American Steel Hoop Company, Carnegie Steel Company, Cambria Steel Company, and others, have just adopted a new list of extras on the small sizes of angles, tees, channels, &c. The new list is as follows:

Standard Shape Classification, Adopted August 26, 1901. HEXAGONS.

% and 11-16 inch.....\$0.10 extra.

%-inch and larger.....

1-10-HCH
%-inch
5-16-inch
On intermediate sizes the extra will be determined by the
average of the next higher and lower sizes.
We roll from 9-32 to 1 inch by 32ds, and 1 to 21-16 inches
by 16ths.
EXTRAS FOR CUTTING TO SPECIFIED LENGTHS.
Hot sawing or shearing, 24 inches and longer\$0.05
Hot sawing or shearing, 12 to 24 inches
Hot shearing, 6 to 12 inches
Machine cutting, specified jengths, 12 to 24 inches
Machine cutting, specified lengths above 24 inches
Machine cutting, specified lengths, less than 12 inches, according to contract, but not less than 3-10th on each side.
ANGLES,
11/4 x 3-16 inch and heavier, but under 3 inchesBase.

1 to 11/4 x 3-16 inches and heavier\$0.05	extra.
3/4 x 3.16 inch	44
% x 3-16 inch	66
% x 1/8 inch	4.6
1.50 x 1/8 inch	44
Angles %-inch and larger, smaller than 3 inches by	
1/4 inch thick, within our range of sizes05	66
3 x 3 inches by less than 1/4 inch thick	64
TEES.	
11/2 x 3-16 inch and heavier but under 3 inches	. Base.
1¼ to 3-16 inch and heavier\$0.05	extra.
1 to 11/8 x 3-16 inch and heavier	66
% x % inch and thicker	
% x 1/8 inch and thicker	44
% x 1/2 inch and thicker 1.00	
Tees within our range of sizes, 1 inch and wider	
by 1/2 inch thick, but smaller than 3 inches05	44

by 1/8 inch thick, but smaller than 3 inches	05	44
CHANNELS.		
11/2 to 3-16 inch and heavier, but under 3 inches		. Base.
1 to 11/4 x 3-16 inch and heavier	.\$0.05	extra.
% x 3-16 inch	10	61
% and % x 3-16 inch thick	15	64
% x 1/8 inch and thicker	30	46
1/2 x 1/8 Inch and thicker	50	44
Channels % inch and wider, but under 31/2 inch	es	
thick	05	84
All extras are net, to be quoted full extras on th	ne list.	

Work for the Navy Department.

Proposals are asked by the Bureau of Supplies and Accounts of the Navy Department for a considerable quantity of material, including some machinery. August 24 bids will be opened for supplies for the Boston Navy Yard, including a quantity of pulleys, hardware, hoists, engine lathe and steam roller. On the same date bids will be opened for a pile driving machine for the Naval Academy at Annapolis, Md. On August 27 bids will be opened for heating furnaces, paint machinery and a flange punch for the League Island Navy Yard, and on September 3 bids will be opened for an air compressor and a quantity of pneumatic tools for the Navy Yard at Puget Sound.

Notices have been posted at the Navy Paymaster's Office, Broadway and Chambers street, to the effect that all bids have been rejected on Class 23 of the supplies recently bid on for the Brooklyn Navy Yard and new bids will be received.

Bids were opened at the Bureau of Supplies and Accounts, Navy Department, on August 13, for supplies for the Mare Island Navy Yard, as follows:

- 11. Baltimore Machine Works, Baltimore, Md.
- Warner Elevator Mfg. Company, Cincinnati, Ohio. Ingersoll-Sergeant Drill Company, New York City.
- Laidlaw-Dunn-Gordon Company, New York City.
 Henshaw, Buckley & Co., San Francisco, Cal.
- 40. Otis Elevator Company, San Francisco, Cal.

 Class 33. Two cross compound, two-stage steam driven air
 compressors—Bidder 34, \$14.594; 39, \$15,720, \$15,320,
 \$15,020, \$14.520, \$14,220 and \$13,220; 50, \$15,725,
 \$14,225 and \$13,225.

Class 34. Main line switch, brake wheel, engine bed plate, sheaves, &c., platform, cage and guide, safety dev cables, &c.—Bidder 40, \$5765; 23, \$6450; 11, \$6712.

The following bids were received at the United States Engineer Office, 2001 I street northwest, Washington, D. C., for furnishing and installing an electric light and power plant at Fort Hunt, Va., opened at 12 a. m., August 9, 1901:

- Item 1, steam boiler, &c.: 2, wiring and lamps; 3, storage battery and stand; 4, special testing apparatus; 5, aerial line.
- W. M. Sheehan, New York, N. Y.: Item 1, \$3950; 2, \$950; 3, \$1400; 4, \$90; 5, \$2470; total, \$8860.
- \$1400; 4, \$100; 5, \$2470; total, \$8860.

 McCay Engineering Company, Baltimore, Md.: Item 1, \$3715;
 2, \$1250; 3, \$1350; 4, \$125; 5, \$2550; total, \$8990.

 Smith-Courtney Company, Richmond, Va.: Item 1, \$4656.42; 2, \$1021.75; 3, \$1546.29; 4, \$76.75; 5, \$2196.08; total, \$90.07.27 \$9407.27.
- National Electric Supply Company, Washington, D. C.: Item 1, \$5975; 2, \$1392; 3, \$1691; 4, \$74; 5, \$2800; total, \$11,932.
- \$11,932.
 Edward Heaton, New York, N. Y.: Item 1, \$4946; 2, \$1126; 3. \$1784; 4, \$80; 5, \$4416; total, \$12.352.
 The Geo. A. Williams Company, Jersey City, N. J.: Item 1, \$6468; 2, \$3363; 3, \$1446; 4, \$60; 5, \$3402; total, \$14,739.
- Jas. C. McGuire, New York, N. Y.: Item 1, \$4500; 2, \$4200; 3, \$1600; 4, \$80; 5, \$5100; total, \$15,480.
 Sipe & Sigler, Cleveland, O.: Item 3, \$1100.

Bids for furnishing heaters, pumps, &c., for the old Post Office Department at Washington, D. C., were received by the Secretary of the Interior, Washington, D. C., on August 12, 1901, as follows:

- Item 1, feed water heater and purifier; 2, steam separator: 3, two feed pumps; 4, one centrifugal pump and engine; 5. one centrifugal pump and two engines; 6, two centrifugal
- pumps and two engines; 7, two bot water heaters; 8, one oil separator; 9, hot water heaters and oil separator.

 Westinghouse-Church-Kerr Company, New York, N. Y.: Item 1, \$764, time 60 days; 2, \$410, time 60 days; 3, \$245, time 60 days; 4, \$848, time, 60 days; 5, \$1308; 6, \$1696; 7, \$1903; 8, \$327; 9, \$2230.
- Baltimore, Md.: Item 7, \$1541.52; 8, Crook. Horner & Co.,
- \$545: 9, \$2086.52. P. Delany & Co., Newburg, N. Y.: Item 7, \$1700; 8, \$280; 9,
- \$1980; time. 45 days. Stillwell-Bierce & Smith-Vaile Company, Baltimore, Md.: Item
- 1, \$617; 2, \$189; 3, \$295. Hopp Mfg. Company, Springfield, Ohio: Item 1, \$538; 2, \$220. Evans, Almiral & Co., New York City: Item 7, \$1920; time, 60 days.
- Warren Webster & Co., Camden, N. J.: Item 1, \$650; 2, \$220;
- 4, \$925; 5, \$1440; 6, \$1776. Kingsford Foundry & Machine Company, Oswego, N. Y.: Item 4, \$835; 5, \$1340: 6, \$1600; time, 60 days.

Niagara Industries.

It is a race between the Niagara Falls Power Company and the great new and enlarged industries that are planning the operation of their factories by the electric energy of Niagara. The power company are hustling to complete their second mammoth generating station, while in full view are new factories going up that expect to have their spindles attached to the new station's force. The steel superstructure of the great new power house is well nigh up, and stretches for several hundred feet over the deep new wheel pit. This wheel pit is to have 11 turbines, each of 5000 horse-power capacity, and each will actuate a 5000 horse-power generator placed in the dynamo room over the pit. This will make the output capacity of the station 55,000 horse-power, giving the company a total of 105,000 horse-power.

Out on the power company's lands the Castner Electrolytic Alkali Company are erecting two very large brick buildings as additions to the works they bought of the Mathieson Alkali Company. These buildings and their installation will allow the company to treble their output capacity of caustic soda and bleaching powder.

The Niagara Electro-Chemical Company have just completed a very substantial addition to their plant, and the Norton Emery Wheel Company have their building up. The McPherson Switch & Frog Company are building their plant, and power has been turned on to the magnificent plant of the Natural Food Company.

At this rate of progress it seems highly probable that the Niagara Falls Power Company before many years must take into consideration the construction of the second tunnel for which they hold a franchise.

Over on the Canadian side of the river, at the Falls, Contractor A. C. Douglass has nearly completed the sinking of the first shaft of the development that is in progress there. Within a very short time it is expected that the contract for the excavation of the first section of the wheel pit will be let, while the contract for the necessary installation will also be awarded soon.

PERSONAL.

E. Windsor Richards, since his return from this country, has been in Bilbao, Spain, in connection with the consolidation of the furnace and steel plants there.

John Budge, superintendent of the shops of the Pullman Palace Car Company at Wilmington, Del., has been appointed manager of the company's plant at Buffalo, N. Y., which employs 1400 men and which includes the works formerly operated by the Wagner Palace Car Company. Mr. Budge is succeeded at Wilmington by J. M. Caarmon, who comes from Denver, Col.

R. H. Grant, formerly of the Grant Tool Company of Cleveland, Ohio, has been appointed superintendent of the plant of the Standard Roller Bearing Company of Philadelphia.

The employees of the Sloss-Sheffield Steel & Iron Company, at Bessemer, Ala., last week presented Capt. John D. Hanby, superintendent of the company's plant, with a fine saddle horse, with saddle and bridle.

Wm. Brown, for many years superintendent of steel plant, Phœnix Iron Company, Phœnixville, Pa., has resigned that position to accept a similar one with the Lukens Iron & Steel Company, Coatesville, Pa., and will assume his new duties on September 1. Before leaving Phœnixville Mr. Brown was presented with a very handsome and valuable gold watch, suitably inscribed, by the employees of the plant.

Andrew Carnegie will not be present at Founder's Day exercises at Carnegie Institute, in Pittsburgh, on November 1 next.

J. R. McGinley has resigned as vice-president and manager of the East Pittsburgh Improvement Company and has sold his interest to George Westinghouse. He has been succeeded by G. S. Smith, vice-president of the Security Investment Company, who own all the stock of the first named company. These interests are owned by the Westinghouse Air Brake Company of Pittsburgh.

Alexander Allenson, for some years head of the fence department of the Rankin works of the American Steel & Wire Company, at Rankin, Pa., has resigned to accept a similar position with the Union Steel Company, whose wire and nail mills at Donora have been started. Mr. Allenson was presented with a diamond pin and his wife with a silver tea service by the employees of the Rankin works.

Garson Myers, one of the Chicago representatives of the Crucible Steel Company of America, sailed for Europe with his wife August 25, for the benefit of his health.

J. J. Wagoner, Chicago resident partner of Fieser, Wagoner & Bentley, is still very seriously ill, his condition causing much anxiety among his friends.

Chicago dispatches report that Randolph S. Warner, president of the Republic Iron & Steel Company, will decline re-election, having decided to retire from busi-

Lloyd Booth, president of the Lloyd Booth department of the United Engineering & Foundry Company, is lying critically ill at his residence in Youngstown, Ohio, and may not recover.

The Neafie & Levy Ship & Engine Building Company, Philadelphia, Pa., successfully launched on the 27th inst. the torpedo boat destroyer "Bainbridge," one of the three torpedo boat destroyers building by that company for the United States Government, the others being the "Barry" and the "Chauncy." A particular feature of the launching of the "Bainbridge" was that when she took the water she was officially estimated to be 96 per

cent. completed, the boilers, engines and other machinery being already in position and having had satisfactory trials while the vessel was still on the stocks. Steam was on the boilers at the time of launching. The "Bainbridge," like the two sister ships still on the ways, is 245 feet long and 23 feet beam. She is equipped with quadruple expansion engines, with cylinders 20½, 32, 38 and 40 inches in diameter. Thorneycroft boilers furnish the steam and it is expected that a speed of 30 knots an hour will be obtained.

Trade Publications.

Wire Rope for Drilling Oil Wells.—The Pacific Coast agency of the American Steel & Wire Company, San Francisco, Cal., have published a very interesting special catalogue dealing with the introduction of wire rope for the drilling of oil wells. For some time wire rope has been used for sand lines, pumping lines and tubing lines, and quite extensive experience had been obtained with drilling lines in the deep artesian well fields of Australia and in drilling wells in South Dakota. The Amerlcan Steel & Wire Company some time since sent a representative into the Kern County oil fields of California, and after a thorough discussion with oil producers and contractors decided that the substitution of wire for the manila drilling lines was not alone possible, but would be thoroughly practicable. An important feature is the use of the Swan automatic drilling swivel. A number of California oil producers have now used the wire drilling lines and indorse them. The catalogue before us goes into details as to the advantages and methods of application, gives an illustrated description of how to connect a wire drilling line, to arrange for spudding, and of the method of splicing.

Gasoline Engines.—The Globe Iron Works Company of Minneapolis, Minn., present in two catalogues the White Gasoline Engines, designed by Clarence O. White. Three general styles are built; the first, a stationary; the second, a portable engine for farm work, &c., and a third, a marine engine for launches, yachts and other water craft. The latter line is described and illustrated in a special catalogue. We miss in both of them, however, a good mechanical description of the principal features of the engine.

Tumbling Barrels,—"Improved Tumbling Barrels" is the title of Catalogue No. 6, issued by Henderson Brothers, machine builders and consulting engineers, Waterbury, Conn., who have made a specialty of this line of machinery for nearly 20 years. The tumbling barrels are built with a double exhaust. Some of those shown in the catalogue are friction geared and others are oblique, which, while they are not equal in capacity to the horizontal barrels for the space they occupy, give a much finer finish to the work. Special foundry barrels, barrels for stove plates, for brass castings, for dry rolling and for tumbling are illustrated.

Feed Water Regulators.-The Williams Gauge Company of Pittsburgh, Pa., present to the trade a booklet descriptive of the Williams automatic safety feed water Essentially it consists of a double stem valve to fill the pressure pipe to the water valve with steam pressure. It is released as the water rises and falls at the center gauge cock. An alarm is whistled instantly from each boiler or battery if the water supply fails from any cause and the water falls to the alarm line. A regulator after 15 months' use at the Carnegie blast furnaces was tested with 125 pounds of steam pressure and the valves did not leak enough to wet a handkerchief. A good many of the iron and steel plants of the Central West are using this apparatus, and others of the Williams steam specialties, including the Williams safety column, the high and low water indicator, the automatic pump and boiler governor and the Williams steam trap.

The Brilliant Iron Company.—George A. Laughlin of Wheeling, who owns the Brilliant Iron & Steel Company, at Brilliant, Ohio, has bought more land adjoining the works, and it is reported that the Brilliant plant may be started and also new works be built.

OBITUARY.

John Applin, for 30 years mechanical superintendent of the Walker & Pratt Mfg. Company's Watertown foundry, died at his home in Newtown, Mass., August 10. He was born in Swanzey, N. H., 72 years ago and came to Boston when he was 18 years old. He became superintendent of the mechanical construction department at the United States arsenal in Watertown just before the Civil War, remaining there until 1871, when he entered the employ of Walker & Pratt. He retired from business about four months ago.

WILLIAM R. FORD, a prominent manufacturer of Concord, N. H., died on August 17 at his summer home at North Rye Beach, aged 90 years. Mr. Ford was the founder of the Concord Iron Works.

Franklin M. Ougheltree, for many years manager of the D. W. Burns Iron Works of Brooklyn, N. Y., died suddenly on August 22 at the age of 45 years.

A Sheet Mill at Cambridge.

(By Telegraph.)

PITTSBURGH, PA., August 28, 1901.—A. W. Brown and W. P. Deval, who were officials and large stockholders in the Cambridge Iron & Steel Company, at Cambridge, Ohio, before they were taken over by the American Sheet Steel Company, are reported to have bought a large site of land at Cambridge and may build a sheet mill on it.

The Mesta Strike.

(By Telegraph.)

PITTSBURGH, PA., August 28, 1901.—About 30 machinists employed by the Mesta Machine Company, at their works at West Homestead, Pa., went out on a strike because of the discharge of a foreman. The men have been paid off and their places will be filled by new men.

Imports of Iron and Steel Into Cuba.

The following comparative statement, showing the imports of Iron and steel and their manufactures into Cuba, has been prepared in the Division of Insular Affairs of the War Department.

The statement shows that during the calendar year 1900 the aggregate value of iron, steel and their manufactures from all countries was \$4,751,395, as against \$2,930,845 during the calendar year 1899, an increase of \$1,820,550, or 62 per cent. The imports of these commodities from the United States in the year 1900 amounted in value to \$3,685,829, as against \$2,395,209 in 1899, an increase of \$1,290,620, or 54 per cent. The comparison by countries follows:

Countries. 1899.	1900.
United States\$2,395,209	\$3,685,829
United Kingdom 305,000	690.734
Germany 136,856	212,795
France 57,815	111,943
Spain	26,108
Austria 625	2,150
Switzerland 732	2,228
Mexico 723	200
Belgium 12,635	19,020
Other countries 2,536	388
Total\$2,930,845	\$4,751,395

A press dispatch from San Francisco says that the longest railroad tunnel in the United States will be built through the Sierra Nevada mountains of California, if the plans of E. H. Harriman are carried out. The tunnel project, which will involve an outlay of from \$3,000,000 to \$5,000,000, contemplates the boring of a hole 27,000 feet in length through the heart of the Sierras. Besides saving a climb of 1500 feet the tunnel will shorten the Southern Pacific line about 7 miles.

MANUFACTURING.

Iron and Steel.

The Roan Iron Company, Rockwood, Tenn., have blown in their new furnace, No. 4. The new furnace has a capacity of about 175 tons per day and is the only one in the South equipped with the Walter Kennedy skip. The stock house is provided with the Hunt system of cable railway for handling stock from bins to the skip.

Engineers of the Midvale Steel Company, Philadelphia, Pa., have prepared plans and blds are now being asked for the erection of a hammer shop 123 feet 5½ inches by 144 feet, to be built of brick and iron.

The first of the new blast furnaces of the Colorado Fuel & Iron Company, at Pueblo, Col., has blown in.

The Jackson Iron & Tin Plate Company have commenced work on a 14-mill sheet and tin plate plant at Clarksburg, W. Va., and contracts for most of the machinery have been let. The officials of the new company are T. M. Jackson, president; W. I. Grove, secretary, and C. C. Moore, treasurer.

There is some talk of a new tin plate mill being built at Meyersdale, Pa. The citizens of that borough propose to issue bonds to the amount of \$15,000, which will be given to the new company, and 6 acres of ground.

The Belfont Iron Works Company, Ironton, Ohio, manufacturers of pig iron, iron and steel cut nails, wire and wire nails, made in one week recently over 10,000 kegs of wire nails, and shipped in that week 10,862 kegs of wire nails, in addition to their shipments of cut nails, galvanized and annealed wire.

The Carnahan Tin Plate & Sheet Company, Canton, Ohio, who will make high grade iron and terne plates and sheet steel, advise us that they will be ready to start six mills about November 1 next.

The Cambria Steel Company, Johnstown, Pa., will go into the manufacture of steel cars on a large scale. The new plant will be built at the Conemaugh Steel Works, and will have a capacity of 40 cars per day.

The Pittsburgh Seamless Tube Company, recently organized in Pittsburgh, have bought a site for the new works and will commence building a plant in the very near future.

The W. J. Carlin Company of Pittsburgh have bought the entire equipment of the Springfield Rolling Mill Company, at Springfield, Ohio. This consists of a 9-inch hot mill, 12-inch cold mill, with necessary shears, five heating furnaces, ten waste heat boilers, two over each furnace, and four steam boilers, together with other equipment. Some of this material has been sold, but the greater part is still at Springfield and on the market. The plant formerly made iron for mower and reaper bars and also made merchant iron bars for the open market. The W. J. Carlin Company have also bought a complete boiler plant from the Turner Engineering Company, at Bucyrus, Ohio. This consists of hydraulic riveters, flanges, presses, shears, punches, electrical equipment, motors, &c. The greater part of this equipment has been removed to Pittsburgh by the purchasers.

The output of the extensive by-product plant being erected by the Ashland Iron & Steel Company, at Ashland, Wis., will be taken care of by Berry Brothers, Limited, varnish manufacturers, Detroit, Mich., who have acquired an interest in the company.

F. H. Clement & Co., contractors, 32 South Broad street, Philadelphia, Pa., have purchased the Schuylkill Haven Iron Company, manufacturers of bar iron, at Schuylkill Haven, Pa., with the expectation of continuing the business without delay.

General Machinery.

The Bremer Machine & Tool Company have been incorporated for the purpose of operating a manufacturing plant at Kalamazoo, Mich. They will manufacture a standard line of punches, presses, shears, milling machines, horizontal forging presses, hand and power presses, foot and power hammers, brass goods and the Bremer check valve. The officers of the new company are as follows: President, C. J. O'Hara, Detroit; vice-president, Frederick K. Wormer, Detroit; treasurer, C. C. Wormer, Detroit; secretary, F. G. Bremer; superintendent, G. J. Bremer.

The Menasha Wood Split Pulley Company, Menasha, Wis., have rebuilt their plant, which was recently destroyed by fire, and now have their works in full operation turning out pulleys. The company were handicapped in securing the special machinery necessary for this plant, or the works would have been in operation earlier.

Bull Brothers, Gasport, N. Y., manufacturers of Friend spray pumps, spraying outfits, gasoline engines, cream separators and other light farming machinery, have been succeeded by the Friend Mfg. Company, recently incorporated, who will continue the business on an enlarged scale. A new work shop, 30×150 feet, two stories high, and a new foundry, will shortly be erected. Such other buildings as may be needed from time to time will be erected. The directors are George Hull, Warren N. Hull, Arthur B. Hull and John C. Hull of Gasport; R. E. Erdman, Thos. Sulley and M. W. Fuller of Buffalo.

The Philadelphia & Reading Railway Company have awarded a contract to George W. Beard & Co. of Reading, Pa., for extensive improvements at Rutherford, on the Lebanon division, five m!les east of Harrisburg. The contract covers an engine house, machine shop and turn table.

The Vandergrift Equipment Company, 40 John street, New York City, have incorporated for the manufacture of all kinds of power transmission appliances, including belting, pulleys, hangers, couplings, &c. For the present they are using an existing plant, but later on they expect to build new works near Yonkers, N. Y., plans for which are not yet completed. The officers are F. H. Smith, president; F. S. Gemmell, vice-president, and R. F. Manning, secretary and treasurer.

The Akron Engineering Company, Akron, Ohio, founders and machinists, formerly incorporated under the laws of West Virginia, have reincorporated under the laws of Ohio, with a capital stock of \$50,000. There will be no change in the business or officers of the company.

A new company, to be known as the Merrill-Sergeant Pump Company, are being organized at Reading, Pa., by John R. Miller, Richmond L. Jones, John Barbey, S. S. Schweriner, Samuel D. Dibert and others of that city. It is their intention to erect and equip a new plant at a cost of about \$100,000, \$25,000 of which has been subscribed. The products of the company will have the name of the inventors and will be known as the Merrill pneumatic displacement pumps, direct acting air compressors, kerosene oil engines, kerosene oil actuated air compressors, crank fly wheel air compressors, improved air motors and improved coal augers.

The Lucas Pump Company, Toledo, Ohio, manufacturers of galvanized iron pumps, will shortly occupy a large two-story brick and frame building on Fifth street, their present quarters being entirely too small for their rapidly growing business.

The old rolling mill plant at Rowlandsville, Md., formerly owned by the McCullough Iron Company, now owned by Wm. T. West & Co., of which concern Logan Brothers are members, is being converted into a machine shop and tank factory.

R. J. Schwab & Sons Company, Milwaukee, Wis., iron founders, machinists and pattern makers, have purchased 88 feet frontage which lay between the present plant and a tract with 44 feet frontage which the company have owned for some time. Temporary buildings are to be erected on the newly acquired tract to care for orders which overtax the present facilities, and by spring it is expected that plans for a plant to cover both the 88 and 44 foot tracts will have been prepared. The old plant will be completely remodeled and extensive improvements made. A new electric crane will be added and the company will be in a better position to handle the increased trade both in the heating and foundry departments.

Machine Tools.

The new addition to the plant of the Cincinnati Planer Company of Cincinnati, Ohio, having been completed, they are now putting in the equipment of machine tools, which includes several planers of their own make, a 36-inch automatic gear cutter, a universal grinding machine, a horizontal boring and drilling machine, a radial drill, a large special turret machine, a milling machine and several engine lathes.

Engines and Bollers.

The Regal Gasoline Engine Company, Coldwater, Mich., manufacturers of stationary and marine engines, recently incorporated, have taken over the plant and business of a concern who have for the past three years been making gasoline engines of from 1½ to 6 horse-power. The new company will considerably enlarge the present works, and the output will be doubled. The officers are A. E. Robinson, president; L. Sloman, vice-president, and H. R. Saunders, secretary and treasurer.

The plant of the J. C. O'Neil Boiler Company at Akron, Ohlo, is to be sold on September 28.

Foundries.

The American Malleable Casting Company, Chicago Highlands, Ill., are arranging for the erection of another building, 40 x 110 feet, two stories high, and of fire proof construction, which will be used for an office, pattern shop and pattern vault.

At the annual meeting of the Hartford Foundry Company, Hartford, Conn., held last week, the following officers were elected: Theodore M. Lincoln, president; J. W. Conway, vice-president and superintendent; Ernest H. Cady, secretary and treasurer, and J. G. Bulkley, assistant treasurer. It was also voted to increase the capital stock to \$100,000. The company will enlarge their plant and when completed will have a foundry 300 x 75 feet, with the necessary core, shipping and pattern departments, which will be equipped with the most up to date compressed air and electrical machinery.

The plant of the Industrial Foundry Company, Cincinnati, Ohlo, was considerably damaged by fire last week, the loss being estimated in the neighborhood of \$10,000.

The Central Foundry Company, 116 Nassau street, New York City, have closed down their Lansdale, Pa., plant until the stock on hand shall have been disposed of. The company supply Philadelphia and vicinity only from this plant, as they

find it more convenient and cheaper to supply other territories from their other plants. This plant is one of the best equipped owned by the company, and they have no intention of abandoning it, as reported, but on the contrary will put it again in operation as soon as business in that vicinity will admit.

Bridges and Buildings.

Among the contracts recently awarded the New England Structural Company of Boston are the following: A 150-foot single span bridge over the tracks at Mattapan for the N. Y., N. H. & H. R. R.; two bridges at Chester, Mass., and the rebuilding of the Cottage Farm drawbridge for the Boston & Albany R. R.; an electric railroad bridge and double track plate girder bridges at Hadley and Hatfield, Mass., for the Boston & Maine R. R.; a foot bridge 300 feet long by 9 feet wide for the American Woolen Company at Lawrence, Mass. This company will also furnish the steel framework for the ten-story Rice Building, Boston; the structural and ornamental iron work for the Lowell Textile School; the steel work for a large addition to the Washington Mills at Lawrence; a coke platform 1800 feet long by 15 feet wide for the New England Gas & Coke Company at Everett, Mass.

Hardware.

The H. F. Brammer Mfg. Company, Davenport, Iowa, have found the demand for their washing machines increasing so rapidly that they recently discontinued the manufacture of fixtures and furniture to enable them to use the building devoted to that department in extending their facilities for turning out washing machines. Even this enlargement of their factory operations is inadequate for the extent of their trade, and they have decided to erect an additional building. The company manufacture the Original Brammer lever machine, the O. K. rotary machine, and the O. I. C. pendulum machine. The leader of these machines is the O. K., which steadily grows more popular. The company have just issued a folder illustrating these machines, which shows them lithographed in their exact coloring. The folder is artistically executed, being a very fine sample of color printing.

Miscellaneous,

Among recently licensed corporations in Illinois are the Wenona Zinc Mfg. Company, Wenona, with a capital stock of \$200,000. Incorporators are William E. Moore, B. D. Brewster and P. A. Mackay.

The Western Electric Company, Chicago, are beginning the erection on their Clinton street front of another building, 55½ x 150 feet, to comprise ten stories and a basement. This build ing will be of thoroughly fire proof construction. The frame will be of steel and the floors and partitions will be constructed of terra cotta tile. All windows and sash will be of copper, and except the floor devoted to office use will be glazed with wire glass. The greater part of this building will be occupied with insulating machinery. The building will be connected by bridges with adjoining structures of the company. They have now pretty thoroughly covered the two blocks bounded by Clinton and Jefferson streets and Van Buren and Harrison streets.

The Syracuse Smelting Works, Syracuse, N. Y., manufacturers of babbitt metal and solder, have enlarged their plant by two additions, 30 x 40 feet and 20 x 24 feet respectively. A new stock house has also been crected. Several furnaces and new machinery have been installed and the melting capacity increased about 3 tons of phosphor bronze ingots and 2 tons of babbitt and solder per day. The company advise us that if their business increases at the rate it has during the past year they will be compelled to get a larger plant located elsewhere. The company have also increased the melting capacity of their Montreal works about $1\frac{1}{2}$ tons per day by the installation of two more furnaces.

The Cedar Creek Manganese Company, Frederick, Md., have increased their capital stock from \$50,000 to \$200,000 in order to further develop their properties at Zepp, Va., where they claim to have a fine quality of manganese ore.

The Schrader Metal Company, Wallingford, Conn., manufacturers of metal novelties, have organized with a capital of \$10,000. The company will absorb the business formerly carried on under the name of Schrader, Smith & Co. The officers are W. H. Ebert, president; Noah Linsley, secretary; L. R. Cook, treasurer, and Charles F. Schrader, manager.

St. Mary's Power Company, Sault Ste. Marie, Mich., have incorporated for the purpose of developing power at that point.

The Ferricup Metal Company of Providence, R. I., manufacturers of copper and brass coated steel sheets, copper wire, bars and sheets, &c., are looking for a good mill with about 25,000 square feet of floor space, mainly on the ground floor, if possible, for heavy manufacturing, and with plenty of land on which to expand. They wish to be near a railroad with spur track privileges, and prefer water power. If a suitable mill cannot be secured the company propose to secure a good mill site and build a mill adapted to their requirements.

The new addition to the St. Mary's, Ohio, plant of the Standard Chain Company, is now about completed and the company have engaged 50 more men. New machinery has been installed, including many labor saving devices of the latest make, which with the increase of capacity makes this plant one of the most complete of its kind in the United States.

The Iron and Metal Trades.

The conviction is growing in the trade that the strike will soon be over. The officials have studiously avoided any steps which might lead to serious trouble, withdrawing in some cases at the danger of a clash. A large proportion of the capacity of the Sheet mills is now turning out material, and additional workmen are being diverted to the Tin Plate rolling mills. The Hoop mills are gaining steadily, so that, speaking broadly, it is chiefly in the Tin Plate and Tube industry that the supply is most seriously affected. It is understood that when the strike was threatened the American Can Company purchased quite heavily in England. One large electric company are reported to have also placed an order for a good sized lot of Sheets.

The Western Bar trade is affected adversely by the closing of the two works in the Chicago district. The stoppage of the Joliet Wire Rod mill has not interfered with work at the Wire mills of the district, because a supply was promptly drawn from the Pittsburgh and Cleveland districts. In the latter a Rod mill, thus far idle, is being started.

Official figures, reflecting the position on August 21, throw a flood of light on the situation so far as it directly interests the trade. The normal product of the Steel plants controlled by the United States Steel Corporation is 525,000 tons of Bessemer Steel Ingots and 235,000 tons of Open Hearth Steel Ingots, a total of 760,000 tons per month. On the date mentioned Steel works were in operation whose normal output is 610,000 tons of Ingots per month.

Statistics relating to the Finished Steel products of all kinds show that the normal production is 700,000 tons per month. On August 21, when the situation was nearly what it is to-day, the product was at the rate of 513,000 tons per month. This, of course, includes Rails, Plates, Wire and Structural Material, not at all affected. and Bars, Sheets, Tubes, Hoops, &c., whose production is curtailed more or less. In other words, the output of Ingots is reduced to the extent of about 150,000 tons, while the production in some finished lines is cut down, in the aggregate, by about 187,000 tons per month.

It is obvious that the consumption of Pig Iron is quite considerably lessened, but that so far as Steel is concerned there is less reduction in output than there is decline in the rolling of finished goods.

Except where there is an actual scarcity caused by the strike, as in Tin Plate, Tubes, Sheets, Bars and Hoops, which command premiums, the markets have been quiet, but quite firm.

The feeling prevails in the trade that after all the strike is not an unmixed evil, since it removes all danger for many months to come of any overproduction of kinished Iron and Seel.

An interesting indication that apparently the fall trade is opening up early and in full volume is furnished by the Wire industry. The consolidation has received an average of over 4400 tons of specifications daily for the whole month of August thus far, the second best month of the whole year, and very much in advance, of course, of the corresponding period of 1900.

A Comparison of Prices.

At date, one week, one month and one year previous.

Advances Over the Previous Month in Heavy Type. Declines in Italics.

PIG IRON:	Aug. 28, 1901.	Aug 21. 1901.	July 31. 1901.	Aug 29 1900.
		1001.	1901.	1000.
Foundry Pig, No. 2, Standard, Philadelphia	\$14.7	5 \$14.75	\$14.75	\$16 00
Foundry Pig, No. 2, Southern, Cin-		0 13 00	12.75	13 75
cinnati Foundry Pig, No. 2. Local, Chicago	15.00		15.00	15 50
Bessemer Pig, Pittsburgh			15.73	15 00
Gray Forge, Pittsburgh			18,75	14 60
Lake Superior Charcoal, Chicago			17.00	19 00
BILLETS, RAILS, ETC.:	2,,,,		******	20 00
Steel Billets, Pittsburgh (nom)	24.5	0 24 50	28 50	18 00
Steel Billets, Philadelphia (nom)			26 00	90 00
Steel Billets, Chicago, (nom)			40 00	20 00
Wire Rods (delivered)			36.00	38,50
Steel Rails, Heavy, Eastern Mill			28.00	
				35 60
Spikes, Tidewater.	1.9		1.80	1.80
Splice Bars, Tidewater	1.5	1.50	1.50	1.50
OLD MATERIAL, PER GROSS TON	4			
O. Steel Rails, Chicago	18.0	0 13 00	13 00	9 50
O. Steel Rails, Philadelphia	16.50	16,25	15 75	12.50
O. Iron Rails, Chicago	20.50	20 50	19 00	12.50
O. Iron Rails, Philadelphia	19.0	0 19 00	19 00	14.00
O. Car Wheels, Chicago	16.5	0 16.50	16 50	15 00
O. Car Wheels, Philadelphia		0 16.50	17.50	17.00
Heavy Steel Scrap, Chicago			12.00	9 00
FINISHED IRON AND STEEL, PE	R POUN	D:		
Refined Iron Bars, Philadelphia	1.60	1.55	1.55	1.30
Common Iron Bars, Chicago	1.60	1.55	1.60	1.30
Common Iron Bars, Youngstown.			1.45	1.60
Steel Bars, Tidewater		0 1.60	1 60	1.25
Steel Bars, Pittsburgh			1.40	1.10
Tank Plates, Tidewater			1.75	1.30
Tank Plates, Pittsburgh	1.0			1.10
Beams, Tidewater			1.75	1.65
Beams. Pittsburgh			1.60	1.50
Angles, Tidewater	1.7		1.75	1.55
Angles, Pittsburgh	1.6			1.40
Skelp, Grooved Iron, Pittsburgh				1.35
Skelp, Sheared Iron, Pittsburgh.			1.90	1.50
Sheets, No. 27, Pittsburgh			3.10	
Barb Wire, f.o.b. Pittsburgh	2.9			2.80
Wire Nails, f.o.b. Pittsburgh	2.8			2.80
Cut Nails, Mill	2.0		2,30	2,20 1.95
METALS:		4.00	*.00	1.90
	10-		40.00	40.00
Copper, New York			16.50	16 75
Spelter, St. Louis			3.80	3 9734
Lend, New York	4.8	714 4.87		
Lead, St. Louis	4.2	-	4.271	
Tin, New York	25.5		28.00	29.75
Antimony, Hallett, New York			8.75	9.50
Nickel, New York Tin Plate, Domestic Bessemer, 100	60.0	0 60.00	60.00	55.00
lbs., New York		. nor	n	4.84

Chicago.

1205 Fisher Building, August 28, 1901.—(By Telegraph.)

Conditions show little change from those reported last The employees of the Illinois Steel Company at their South Chicago plant continue at work in spite of the strong pressure brought upon them to induce them to strike. The Milwaukee and Joliet works of the company are idle, but reports are in circulation that the Joliet strikers are becoming uneasy and they are expected to decide to return to work within the next ten The belief is gaining ground here that the Westdays. ern plants of the United States Steel Corporation will all be in operation very shortly. Public sentiment is so strongly against the strike that it is having an effect on the minds of those strikers who are inclined to be reasonable. Great embarrassment is being caused by the scarcity in such products as are directly affected by the strike. Manufacturing consumers are finding their operations restricted for lack of material, while their customers are clamoring for goods. Thus far no actual shortage has occurred in Wire Nails, as the Jollet mills of the American Steel & Wire Company have been kept in operation by vigorous efforts, a sufficient supply of Rods having been secured from other localities.

Pig Iron.—While the total tonnage of transactions the past week was under that of the preceding weeks, condi-

tions prevailing in the trade are of a distinctly encouraging character. Not so much individual heavy buying is reported, but the number of transactions has been larger and represents a decidedly better feeling among the rank and file of the foundry trade. Numerous orders for ordinary Foundry Iron have been received, running from 300 to 500 tons. Foundrymen who, in ordinary course, would have contracted in June or July for the last half of the year, are now entering the market as rapidly as they can make up their minds that their own business will be satisfactory. The local foundries are rapidly overcoming labor troubles and this is contributing to the improved tone in the market. Some fair sized inquiries are going the rounds for Malleable Bessemer, and one consumer wants about 5000 tons of Standard Bessemer. but buyers of other classes of Iron are not yet inclined to make large purchases. We quote as follows:

Lake Superior Charcoal	17.00 to	18.00
Local Coke Foundry, No. 1	15.50 to	
Local Coke Foundry, No. 2	15.00 to	15.50
Local Coke Foundry, No. 3	14.50 to	15.00
Total Cont Poundry, No. 5		
Local Scotch, No. 1	15.75 to	16.25
Onio Strong Softeners, No. 1	16.00 to	16.50
Southern Silvery, according to Silicon.	14.90 to	15.15
Southern Coke, No. 1	14.90 to	15.15
Southern Coke, No. 2	14.15 to	14.40
Southern Coke, No. 2		
Southern Coke, No. 3	13.65 to	13.90
Southern Coke, No. 1 Soft	14.65 to	14.90
Southern Coke, No. 2 Soft	14.15 to	14.40
Foundry Forge	13.15 to	13.40
Southern Gray Forge	12.90 to	13.15
Southern Mottled	12.90 to	13.15
Southern Charcoal Softeners, according		
	TE 00 4-	10 50
to Silicon	15.00 to	16.50
Tennessee Silicon Pig	16.00 to	17.00
Alabama and Georgia Car Wheel	19.90 to	20.50
Malleable Bessemer	16.00 to	16.50
Standard Bessemer	17.50 to	18.00
	11.00 00	10.00
Jackson County and Kentucky Silvery,		
8 per cent. Silicon	15.75 to	16.25

Bars.-The market is somewhat chaotic with so many of the mills usually supplying this locality closed by the strike. The companies not affected are taxed to their utmost capacity to endeavor to supply the trade, and under the circumstances prices are becoming difficult to quote. Manufacturers are making special terms on every order. The character of the order, the standing of the buyer, the time of delivery and, in fact, all sorts of matters are taken into consideration in making up prices. Mill shipments of Common Iron are in this way quotable from 1.60c. to 1.70c., Chicago, while Soft Steel Bars are selling from 1.65c. to 1.75c. Orders in numerous cases are being entered to be delivered by manufacturers at their earliest convenience, the buyers taking their chances at getting the material in time to meet the requirements. Jobbers are receiving orders from points far outside of their usual territory and are getting store prices on what would ordinarily be classed mill trade. Buyers who need particular sizes are not hesitating at \$2 to \$3 per ton, if they can secure what they need and have it shipped immediately. Small lots are quoted at 2c. minimum for Bar Iron, 1.90c. to 2c. for Steel, and 3c., base, for Hoops, No. 13 and lighter.

Car Material.—A stronger demand has sprung up for material used by the car builders, who are receiving better orders for cars. The indications point to a larger business in this line.

Structural Material.—No large orders are reported, but manufacturers are enjoying a fine volume of business in moderate sized quantities. A great deal of work is hanging fire which would be put under contract if owners were able to secure definite promises from manufacturers of deliveries of the material necessary. It appears, however, that the mills are so crowded with work that they will be unable to take any important contracts for delivery through the fall months. Mill shipments are quoted as follows: Beams, Channels and Zees, 15 mches and under, 1.75c.; 18 inches and over, 1.85c.; Angles, 1.75c. rates; Tees, 1.80c.; Universal Plates, 1.75c. to 1.85c.; small lots of Beams and Channels from local yards are quoted at 2.25c.; Angles, 2c. rates; Tees, 2.15c.

Plates.—Trade continues in good condition. Manufacturers are steadily making sales which equal their shipments. Jobbers report a fair demand from stock which seems to be increasing, while prices are tending upward in sympathy with prices of Sheets. Mill shipments are quoted as follows: Tank Plate, ¼-inch and heavier, 1.75c. to 1.80c., Chicago; Flange, 1.85c.; Marine, 1.95c. Jobbers are selling small lots from store at 1.90c.

to 2c. for Tank and 2.25c. for Flange, with the usual extras for heads, segments, lighter gauges, &c.

Sheets.—Sales agents of the independent mills are unable to promise deliveries under six or eight weeks. Some of the mills are having much difficulty in getting a sufficient supply of Sheet Bars. Consumers are continuing to draw heavily from the stocks of the local merchants, but these stocks are now running quite low, and it is almost impossible to get certain sizes. The demand is particularly heavy for Nos. 14 to 16 and Nos. 26 to 28 Black Sheets. Stove Pipe sizes are completely gone. No. 27 Black is quoted 4c. to 4.25c., the higher quotation being made by those actually having some stock from which to make shipments. No. 14 is selling at 3c. to 3.10c. Galvanized Sheets are now held at 65 to 60, with stocks running very low.

Cast Pipe.—The demand is very heavy for Small Pipe, particularly for 4 and 6 inch Pipe. The largest foundries are 60 days behind in filling orders for small diameters. Large sizes are not called for at present to any extent, as the season is now growing late for laying Pipe of this character. Prices are exceedingly firm.

Merchant Pipe.—Everybody in the Wrought Pipe trade is now seeking for a greater or less quantity. Some sizes are very scarce, and when a stock of these is found buyers will pay anything in reason. Prices under the circumstances are arbitary, being governed by the condition of stocks, the character of the order, &c.

Boiler Tubes.—Stocks in this line are running quite low and buyers are having great difficulty in securing what they want. Prices have advanced considerably and will be still higher if the strike in the Tube mills is not soon settled.

Rails and Track Supplies.—New business in Heavy Steel Rails is small because of the crowded condition of the mills for the remainder of this year. Light Rails are in such urgent demand that orders are being placed with local mills, even though it is impossible for definite time to be fixed for delivery. Rails of 12-lb. Section have been sold at 2c. per lb. from store. Mill prices for Heavy Sections are \$28 and for Light Sections \$29 to \$33. Track Fastenings are moving freely and prices are firmly held. Quotations are as follows: Splice Bars, 1.65c. to 1.75c.; Splkes, 2c. to 2.05c.; Track Bolts, with Hexagon Nuts, 2.90c. to 2.95c.; Square Nuts, 2.75c. to 2.80c.

Steel Billets.—Some business is being done in Open Hearth Billets, which are in demand for forging purposes in quantities running from single carload lots to 50 tons or more. On such quotations are \$28 to \$30.

Merchant Steel.—This branch of the trade continues in healthy condition. Manufacturers are steadily in receipt of a good run of orders, which occasionally include contracts from belated implement manufacturers. Mill shipments, Chicago, are quoted as follows: Smooth Finished Machinery Steel, 2c. to 2.10c.; Smooth Finished Tire, 1.85c. to 2c.; Open Hearth Spring Steel, 2.30c. to 2.40c.; Toe Calk, 2.40c. to 2.60c.; Sleigh Shoe, 1.85c. to 1.90c.; Cutter Shoe, 2.40c. to 2.60c.; Cold Rolled Shafting, 55 to 60 off. Ordinary grades of Crucible Tool Steel are quoted at 6%c. for carloads and 7c. to 7½c. from store; Specials, 12c. upward.

Old Material.—Old Iron Rails are in fair demand, with supply so closely held that buyers are compelled to pay full prices for what they need. Some dealers are buying Railroad Wrought Scrap and paying more than manufacturers are offering, in some cases \$1 to \$1.50 and more. It is asserted that the dealers are compelled to make such purchases in order to fill contracts taken some time since, and that the prices thus made do not represent the market. A good demand is noted for Busheling Scrap, Turnings and Borings, but Cast Scrap and Steel Melting Scrap are very dull. The following are approximate quotations per gross ton:

with roundings dustrice L. O	
Old Iron Rails	\$20.50 to \$21.00
Old Steel Rails, mixed lengths	13.00 to 13.50
Old Steel Rails, long lengths	15.50 to 16.00
Heavy Relaying Ralls	25.50 to 26.00
Old Car Wheels	16.50 to 17.00
Heavy Melting Steel Scrap	12.00 to 12.50
Mixed Steel	10.50 to 11.00

The following quotations are per net ton:

Steel Car Axles 15.50 to 1	6.00
No. 1 Railroad Wrought 14.50 to 1	5.00
No. 2 Railroad Wrought 13.00 to 1	3.50
	6.00
	2.50
No. 1 Busheling and Wrought Pipe 10.50 to 1	1.00
	1.00
Soft Steel Axle Turnings 9.00 to	9.50
Machine Shop Turnings 10.00 to 1	10.50
Cast Borings 4.50 to	4.75
Mixed Borings, &c 4.50 to	5.00
No. 1 Boilers, cut	12.00
	10.00
	1.00
	8.50
	12.00
Agricultural Malleable 10.50 to	11.00

Metals.—Copper is quiet but unchanged, with carload flots of Lake held at 17c., and Casting Brands at 16½c. Pig Lead is still quoted at 4.32½c. for Desilverized and 4.42½c. for Corroding in 50-ton lots. Dealers continue to quote selling prices on small lots of Old Metals as follows: Copper Wire and Heavy, 15c. to 15½c.; Copper Bottoms, 14c.; Pipe Lead, 4.15c.; Zinc, 2.75c.

Coke.—A better general demand has sprung up, with considerable buying being done by consuming interests further West. Quotations at \$4.25 to \$4.75 for 72-hour Foundry Coke.

Philadelphia.

FORREST BUILDING, August 27, 1901.

The market for Iron and Steel is holding pretty steady pending a settlement of the strike, which is believed to be near at hand. Prices are a little uneven, some stronger, some higher, and some are said to be easier and a shade lower on first-class business. Taking the market in its entirety, we should say it averages somewhat better than last week, particularly for Finished Material, Bars having advanced and Structural Material placed at a somewhat higher premium for prompt deliveries. Pig Iron is inclined to dullness, and in some cases prices are not as firm as they were earlier in the month; but it is a spotted market all the way through and will no doubt continue so until the strike is settled. A readjustment will be made, but it is hardly likely to vary much from to-day's quotations, particularly for early deliveries.

Pig Iron.-Business has not been active during the past several days, but prices have held quite firmly. Sales have been mostly in small lots, with an occasional one of 500 or 1000 tons, and, as a rule, at very fair prices. Low grade Irons have been pretty well cleaned up by Pipe founders at from \$13.25 to \$13.50, delivered, and Gray Forge at \$13.75 to \$14 for mill purposes; No. 2 Plain at \$14.25 to \$14.50 and No. 2 X at \$14.85 to \$15.25, for deliveries in Philadelphia or equivalent points, and about 25c. less for the Harrisburg districts. Opinions differ somewhat as to the probable course of the market after the strike is settled, but some good judges are figuring on higher prices during the last quarter of the year than any that have been realized up to this date. Consumers are not as sanguine as sellers appear to be, although it is evident that they have not been able to make much impression yet, so that it is hardly probable that it can be done just at the time when work is likely to be resumed after a two months' suspension at some of the leading mills. Guesses in times like the present are liable to be misleading, however, but we are stating on the one hand what sellers say, and on the other the way that buyers act, leaving others to form their own opinions. There is a fair chance for a better market, and it would not take much to give it a start; but whether the impulse will be given at the right time or not remains to be seen. Stocks are light in both first and second hands, so that there must be a steady demand for a considerable time to come, but there is no certainty as to its character. Makers of Pig Iron will certainly try to secure some orders for winter delivery, and prices will depend a good deal on the way that buyers respond. A few large sales covering six months' deliveries would impart a strong tone to prices, while the continued absence of such buying would probably result in a featureless dragging market, until buyers gained more confidence in ruling quotations, or adjustments were made which would induce a renewal of demand on a scale sufficient to make pro-

ducers feel reasonably safe without curtailing their output. The range of prices would be about as follows for deliveries as above stated: No. 1 X Foundry, \$15.50 to \$16; No. 2 X Foundry, \$14.85 to \$15.25; No. 2 Plain, \$14.25 to \$14.75; Standard Gray Forge, \$13.75 to \$14; Ordinary Gray Forge, \$13.25 to \$13.50; Basic (Chilled), \$14 to \$14.25; Bessemer, nominal, at about \$14.50.

Billets.—Scarcity is the leading feature and deliverles difficult to arrange until November or later. A few small lots have been taken at about \$27, but for November and later 50c. to \$1 or more of a reduction might be accepted; but there is no certainty about it, as every inquiry is subjected to a close scrutiny and is quoted on in accordance with its merits and claims for attention. It is intimated that some important sales have been made at comparatively low prices. This is believed to be in anticipation of an early settlement of the strike. Deliveries, however, are for long dates, and with prices guaranteed.

Muck Bars.—There is a very urgent demand, but Bars are so scarce as to be practically beyond reach. Prices are nominally \$28 to \$29, f.o.b. cars, sellers' mills, with plenty of buyers at the medium figure.

Plates.—Business is very good, and large additions could be made to order books if mills would accept business from points at a distance. There is a desire to take care of the local trade, however, which absorbs about all the Plates that can be turned out. A considerable amount of new business is also pending from bridge shops, ship yards, locomotive works, besides that to come in to replace the tanks which were destroyed by fire during last week. Prices firm and unchanged as follows—viz., for city and nearby deliveries: Plates, ¼-inch and thicker, 1.75c. to 1.80c.; Universals, 1.75c. to 1.80c.; Flange, 1.90c. to 2.10c.

Structural Material.—There is a heavy demand, and mills find it extremely difficult to keep up with their deliveries. There is a great deal of new business in sight, and premiums of more or less importance are required on all orders that specify early shipments. Prices remain as last quoted—viz., for seaboard or nearby deliveries: Angles, 1.75c. to 1.85c.; Beams and Channels, 15-inch and upward, 1.75c. to 1.85c.

Bars.—An advance has been made of \$1 per ton on carload lots, the price now being based on 1.5c., f.o.b. Pittsburgh, and 1.6c. for anything less than carloads. The demand is very heavy, and many of the mills are almost swamped with business, as stocks are now pretty well exhausted. Iron and Steel Bars are about the same price, say 1.62½c. for carload lots and upward and 1.70c. for smaller quantities, delivered at Philadelphia or equivalent points.

Sheets.—There is more business offered than could be handled in six months, and as the mills are nearly all sold two or three months ahead, it is almost impossible to place new orders, prices being almost anything that may be quoted, providing early deliveries can be made. Nominal quotations would be about as follows for best Sheets, but it is very uncertain if an order could be placed for any large quantity (Common Sheets two-tenths less): No. 10, 2.60c.; No. 14, 2.80c.; No. 16, 2.90c. to 3c.; Nos. 18-20, 3.50c.; Nos. 21-24, 3.60c.; Nos. 26, 27, 3.75c. to 3.80c.; No. 28, 4c. to 4.25c.

Old Material.—Prices are strong, but not quotably different from those named a week ago. Some grades are very scarce, such as No. 2 Light, Old Iron Rails, Heavy Melting Steel and Low Phosphorus Scrap. Bids and offers are about as follows for deliveries in buyers' yards per ton of 2240 lbs.: Choice Railroad Scrap, \$18.50 to \$19; Country Scrap, \$15.50 to \$16; No. 2 Light Scrap, \$13.50 to \$14.00; Machinery Cast, \$13.75 to \$14.50; Heavy Steel Scrap, \$16.75 to \$17; Old Iron Rails, \$19 to \$20; Old Steel Rails, \$16.50 to \$16.75; Wrought Turnings, \$11.50 to \$12; Cast Borings, \$7.25 to \$7.50; Old Car Wheels, \$16.50 to \$17; Iron Axles, \$23 to \$23.50; Steel Axles, \$17 to \$18.

A press dispatch from Huntington, W. Va., states that the citizens there will subscribe \$200,000 toward the erection of a steel plant, to be located in that city. It is stated work is to commence on it this fall.

Cincinnati.

FIFTH AND MAIN STS., August 28, 1901.-(By Telegraph.).

The general conditions in Pig Iron have not changed materially in the past week. With the close of August the situation shows up as a more than ordinarily active summer. July was one of the best months of the year. August was fair; some agencies report it as even good. The past week was about on an average with the rest of the month. There was more large inquiry than for a short time past, the result of which was rather small owing to the fact that the furnaces are in the main holding for better prices than buyers are willing to recognize. A local concern recently endeavored to purchase 5000 tons of No. 2 Southern Iron. It is understood they succeeded in buying one-fifth of that amount at a price not far from \$10, Birmingham basis. The general understanding is that it was sold by one furnace which is at present outside of the agreement. In spite of the fact that charges are being freely made that some of the agreement furnaces are selling at less than the \$10.50 basis, there is not a great deal of Iron being purchased by the concerns who are offering \$10. The outlook is a little bit uncertain and hard to judge, both as to actual selling prices and as to the amount of business likely to come within the next week. Freight from Birmingham is \$2.75 to this point; from Hanging Rock district, \$1. We quote, f.o.b. Cincinnati:

Southern Coke, No. 1	13.50 to	\$13.75
Southern Coke, No. 2		13.25
Southern Coke. No. 3	12.50 to	12.75
Southern Coke, No. 4		
Southern Coke, No. 1 Soft		13.75
Southern Coke, No. 2 Soft	13.00 to	13.25
Southern Coke, Gray Forge	12.00 to	12.25
Southern Coke, Mottled	12.00 to	12.25
Ohio Silvery, No. 1	15.50 to	16:00
Ohio Silvery, No. 2	14.50 to	15.00
Lake Superior Coke, No. 1	14.50 to	15.00
Lake Superior Coke, No. 2	14.00 to	14.50
Lake Superior Coke, No. 3	13.50 to	14.00
Southern Basic		14.00

Car Wheel and Malleable Irons.

Standard Southern Car Wheel, chilling \$18.25 to \$18.75 grades . \$18.25 to \$18.75 Standard Southern Car Wheel, No. 2. 17.25 to 17.75 Lake Superior Car Wheel and Malleable 18.50 to 19.00

Plates and Bars.-While the market is still active and remarkably strong on Plates, there is no change in the quotations from last week. We quote, f.o.b. Cincinnati: Iron Bars, in carload lots, 1.60c., with half extras; same in small lots, 1.80c., with full extras; Steel Bars, in carload lots, 1.55c., with half extras; Base Angles, in carload lots, 1.80c.; Plates, 1/4 inch and heavier, 1.90c. to 2c.; 3-16 inch, 2.10c.; Sheets, No. 16, 2.90c. to 3c.

Old Material.-Business remains quiet, and the amount of trade is considered about normal for the season. We quote dealers' buying prices, f.o.b. Cincinnati, as follows: No. 1 Wrought Railroad Scrap, per net ton, \$13.50 to \$14; Cast Railroad and Machine Scrap, \$12.25 to \$12.75; Iron Axles, \$19 to \$20; Iron Rails, \$17.25 to \$18.25; Steel Rails, rolling mill lengths, \$14.75 to \$15.25; short lengths, \$13.75 to \$14; Car wheels, \$15.75 to \$16. All prices except No. 1 Wrought on the basis of gross tons.

Cleveland.

CLEVELAND, OHIO, August 27, 1901.

Pig Iron.-Transactions on the market this week have been wholly subject to the strike conditions and in consequence the Pig Iron trade has shown a tendency to do business only for the immediate future. In the Foundry grades the buying has been steady and strong, but hardly of the volume that ought to be expected at this time. There is an impression in the trade that should the strike continue much longer some of the Bessemer furnaces will be turned into the production of the foundry grades, and in consequence the buyers are waiting for that time, believing that the supply of material will be better. No such determination, however, has manifested itself. Foundry No. 1 is selling at from \$14 to \$14.50, and No. 2 is selling at \$13.50 to \$14. Upon all orders immediate delivery is desired and is also hard to obtain, as the furnaces are pretty well filled up. This week a small sale of Basic was made that re-establishes the price of that material. It went in at \$15 at the Pitts-

burgh furnaces, which is on the same basis as former sales. The demand for Bessemer Iron is very light, and some of the association furnaces in the valleys are collecting heavy stock piles. The price does not change from \$15.25, although no sales have been made lately to make that price real rather than nominal, as it now

Finished Material.—Those materials which are produced by the plants of the United States Steel Corporation which are now idle are very hard to obtain, and the call for the various grades is not only heavy but urgent. It has now come down to the point where Sheet mills are able to sell only what they have in stock. This is due to the fact that the capacity which is still active has been engaged ahead by recent and urgent orders. The prices do not change in the least for material out of stock, 3.95c. on No. 28, one pass, cold roll, still being quoted, and 2.50c. on No. 10, blue annealed. Barsare almost equally hard to obtain. Those mills which are still employed are trying to take care of their own contracts and also meet the requirements upon the mills of the Steel Corporation, which are producing no Bars. Naturally this is crowding them to the very last limit of their capacity and still they are not able to meet the demand. Some buyers have also asked that orders taken a short time ago for long time delivery be filled at once. Prices hold at 1.50c. on Steel Bars and 1.55c. on Iron Bars. Some sales of Rails have been made this week for delivery into next year. In fact enough of them have been sold at \$28 to fix the price for that period. The report has had a buoyant effect upon the market, and the outlook is most encouraging to the mills. There is a tremendous demand for structural material, and deliveries are hard to obtain. November 1 is set as the earliest possible date at which deliveries can now be made by the principal mills. The scarcity is most marked, probably, upon Angles, for which there is a heavy call. The price does not change in the least, 1.70c. being quoted. Billets and Sheet Bars are in very large demand, and the sales are quite heavy at \$24 on Billets, \$25 on Sheet Bars and \$27 on small Billets.

Old Iron.-The sales of Scrap have been very heavy all week, and the business is brisk at old prices. The quotations are: No. 1 Wrought, \$15 net; Steel Rails, \$15 gross; Heavy Steel, \$15 gross; Cast Borings, \$6 net; Wrought Turnings, \$10 net.

(By Telegraph.)

It was learned here to-night that the scarcity of Sheets has caused the Westinghouse Electric Company to place an order for several thousand tons of that material with English mills, importations to be made as soon as shipping facilities are available. The price is not named.

Birmingham.

BIRMINGHAM, ALA., August 26, 1901.

The Iron market the past week showed an improvement both in the demand and prices. It was the latter half of the week that this was most noted. There were early sales on the basis of \$10.50 for No. 2 Foundry Iron, but the demand showed such a notable increase that the price was raised to \$10.75, and this price became the market and was the ruling price. This grade is very firmly held, as it is in limited supply, and with some interests it is in very light supply, and some difficulty has been experienced in the prompt filling of orders. Noneof the higher grades of Foundry are in large supply. Very moderate suits their condition." No. 2 Soft still hangs around the price of No. 2 Foundry, while No. 1 Soft is 50c. higher. No. 3 Foundry is \$10.25 and in very fair demand. No. 4 Foundry was held at \$9.75, and the buyers paid it, showing confidence in maintenance of values. Gray Forge was moved up to \$9.50 and was held pretty firmly. It is also noted there was fair inquiry for Basic Iron, with sales at \$11.25, but it is difficult to obtain it for delivery this side of the last quarter of the year. It is conservative to say that the week closed at an advance of 25c. over the preceding week. The better feeling is due to two causes, 1, buyers have

for some time past limited themselves to actual necessities on account of the fear of the derangement of trade growing out of the strike, and stock piles are in many instances so near nil that they must be replenished. Then, in the second place, every day so shows its apparent weakness that the fear of injury becomes less and less. Some export business was worked, but not for any significant quantity. But the fact that any is being worked shows that the foreign markets are coming to a parity with ours. In Steel there is no trouble to find an eager market for all that is offered, and if capacity to supply demand was quadruple what it is now it would readily be absorbed. The quality of the Steel has met the approval of thoroughly experienced Steel masters. The steel mill of the Republic Company is in operation, but the product is mainly for the use of that company.

The Bessemer Land & Improvement Company, who are also miners of Coal, have closed a contract with the Florida East Coast Line for 40,000 tons of Coal to be delivered as needed. They also have a contract with the Western Railway of Alabama for 36,000 tons. They also report an export order of 5000 tons per month , extending over several months. Their output is about 2500 tons per day. The Excelsior Coal & Coke Company have been organized with a capital of \$100,000 to work their property in Walker County. The charter gives them the usual liberal privileges accorded to corporations. The Globe Coal Company at Littleton are pushing operations in their mines. While there is activity in all the mines, there is urgent demand for more labor. To this point the Sloss-Sheffield Company will transfer their convicts from Coalburg as soon as stockades can be built, and greatly add to its importance as a mining camp and center. Other Coal properties are in constant and successful operation, and the prospects for a market for the output have much improved. From the Blacton mines six loaded trains go out daily. The Sloss-Sheffield Company are working their mines four days out of six.

The Iron Bed Company have practically completed their plant at Avondale, the building occupying 150 x 150 feet. This is another feeder to other and larger industries. The capacity will be 150 beds per day. Other industries have been organized with comparatively small capital, but their diversification is becoming more marked.

A good deal of work is being done for the sugar country, and the sphere of our trade is constantly on the increase. Expansion of trade is steadily following increased capacity.

Pittsburgh.

Hamilton Building, August 28, 1901.-(By Telegraph.)

Pig Iron.—The nominal price of Bessemer Iron is \$15.25 at furnace, but there is nothing doing but an oceasional small lot. A little Bessemer Iron has been sold into September, but the amount is small. There is no disposition on the part of the Valley furnaces to reduce the price, nor does the United States Steel Corporation wish to have the price reduced. That concern buy only a small percentage of their actual requirements of Iron, but sell a very large tonnage of material based on the price of Bessemer Iron, and it is manifestly to their advantage to have the price reasonably high. There has been a good deal of tonnage of Basic Iron sold for shipment as far ahead as November and at about \$14.50, Valley furnace. Gray Forge is quiet at \$13 at furnace; \$13.75, Pittsburgh. Foundry Iron is dull and prices are We quote: Bessemer, \$15 to \$15.25, Valley, or \$15.75 to \$16, Pittsburgh; Gray Forge, \$13, at furnace, or \$13.75, Pittsburgh; No. 2 Foundry, \$13.75 to \$14, Pitts-

Muck Bar.—There have been several sales of Muck Bar at about \$30.50, Pittsburgh. We quote the market at that price.

Steel.—The demand for Steel is for small lots only and for prompt shipment. The nominal price of Steel is \$24, maker's mill, but up to \$24.50 or higher has been paid for Billets for prompt shipment. We note several

sales aggregating probably 300 tons at about \$24.50, maker's mill.

(By Mail.)

The Iron market is strong all along the line and the tendency of prices is decidedly upward. In fact, on some lines of goods, such as Pipe, Bars, Skelp and Sheets, the independent mills have marked up prices anywhere from \$2 to \$6 or \$7 a ton. This, however, has not been the policy of the United States Steel Corporation, the constituent companies of that concern continuing to book tonnage at prices ruling before the strike was started. Of course many of these contracts have no specified delivery and will be shipped when the idle mills get started. The policy of some of the mills in making such heavy advances in prices and squeezing the buyer, simply because there is a chance to do so, is severely criticised. Had it not been for the strike there is no doubt whatever but that prices on all kinds of Iron and Steel would have been lower now than they were before the strike started. The country is producing Pig, Steel and Finished Material at an enormous rate, and it is doubtful whether, even with our enormous consumption, we would have been able to have absorbed all of the material that is being made. The strike, however, cut such a hole in production that nearly all kinds of material are scarce and are bringing fancy prices for prompt delivery. Pig Iron is quiet and the nominal price of Bessemer is \$15.25, at the furnace. Steel for prompt shipment is active and has sold up to \$24.50 or higher, at maker's mill. All kinds of Finished Iron and Steel are in active demand, and, as noted before, prices for some lines have sharply advanced. The strike is dealt with in detail elsewhere in this issue, but it may be remarked here that the reports of peace emanating from Amalgamated Association resources are entirely without foundation. There is no use of third parties trying to act as mediators to bring about a settlement. The United States Steel Corporation, through their constituent companies, are going ahead starting up their mills, and are making gains in this direction every day. Any overtures for peace to be entertained by the United States Steel Corporation must come from the Amalgamated officials. Until such overtures are made all reports of a settlement to be brought about by the intervention of third parties can be put down as unreliable.

Ferromanganese.—The market is very quiet and the nominal price of domestic 80 per cent. Ferro is \$55 a ton, delivered. Foreign Ferro is being freely offered in this market at \$52.50 to \$53.50, in carloads and larger lots.

Bars.-Steel Bars for prompt shipment are scarce and are selling at 1.50c. and higher, an advance of \$2 a ton over the association price of 1.40c., f.o.b. Pittsburgh. We may note that several mills rolling Steel Bars that are well sold up are quoting 1.50c. minimum, and in some cases 1.60c. has been obtained for prompt Bars. Most of the leading Bar mills, however, continue to quote the association price of 1.40c. for delivery within two to three months. A good deal of tonnage is being placed and the Bar mills have all they can do for the balance of this year. We continue to quote Steel Bars 1.40c., at mill. half extras. On Open Hearth Steel Bars \$2 a ton extra is charged, and also extras on high carbon. We note, however, that Steel Bars for prompt shipment are being sold from 1.50c. to 1.60c., at mill. Iron Bars are in about the same condition as Steel, being scarce for prompt shipment. We quote Common Iron Bars 1.45c. to 1.50c., at Valley mill.

Structural Material.—While no large jobs are being placed, there is a good run of orders for Structural Steel, and the mills are all very busy and have all the work they can take care of for the balance of this year. The tonnage in Shapes will be much heavier this year than in any previous year. There is no change in prices and we quote: Beams and Channels, up to 15-inch, 1.60c.; over 15-inch, 1.70c.; Angles, 3 x 2 up to 6 x 6 inches, 1.60c.; smaller sizes, 1.55c. to 1.60c.; Zees, 1.60c.; Tees, 1.65c.; Steel Bars, 1.40c. to 1.45c., half extras, at mill; Universal and Sheared Plates, 1.60c. All above prices are f.o.b. Pittsburgh.

Steel Rails.—Some tonnage in Rails has been booked for export to Mexico. None of this business, however, was taken by the local mill. There have also been some sales of Rails for next year delivery. We quote at \$28, at mill.

Sheets.-One or two more mills of the American Sheet Steel Company have been started, and this company are now producing considerably more than half their whole capacity. More mills will be started up this week, and it seems only a question of a short time until all the Sheet mills of the American Sheet Steel Company are running, and on a nonunion basis. The independent mills are, of course, profiting very much by the scarcity of Sheets, and are able to get almost any price they ask for Sheets for shipment within 60 days. We quote No. 27 Black Sheets at 3.75c. to 3.90c. and No. 28 at 3.90c. to 4c. These prices, however, are for prompt shipment. Sheets for delivery in last three months of the year could be bought on the basis of about 3.15c., maker's mill, for No. 27 and 3.25c. for No. 28. We note that some mills are quoting higher prices than this for Sheets for shipment over balance of the year. As before noted, a good many new Sheet mills will soon be started up, but most of these have their products sold up anywhere from two to four months. Galvanized Sheets continue very scarce and bring almost any price sellers care to ask. We quote Galvanized Sheets at 70 and 5 off to 70 off, but note that jobbers who can ship out from stock are able to sell at higher prices. We also note that the leading Sheet interest are willing to take orders at prices adopted July 1, but without specified de-

Plates.—There is a fair amount of tonnage being placed, but it is mostly in small lots. The leading Plate mills are pretty well filled up, but some of the small mills could take on more tonnage. We are advised that pool prices on Plates are being firmly held. We quote: Tank quality, ¼-inch and heavier, 1.60c.; 3-16-inch, 1.70c.; under 3-16-inch and above No. 10, 1.75c.; Flange or Boiler Steel, 0.1c. advance over the base of Tank; Marine and Fire Box, American Boiler Manufacturers' Association specifications, 0.2c. advance over Tank; Still Bottom Steel, 0.3c. advance over Tank; Locomotive Fire Box Steel and equivalent specifications, 0.5c. advance over Tank, all f.o.b. Pittsburgh.

Merchant Steel.—Demand is good and buyers are placing orders for delivery three or four months ahead at present prices. Some of the Implement makers have been in the market recently and have placed considerable tonnage. Prices are firm, except Shafting, which is demoralized, the market being an open one. We quote: Tire Steel, 1.60c. to 1.70c.; Toe Calk, 1.85c. to 2c.; Open Hearth Spring, 2c. to 2.10c.; Plow Slabs, 2c. to 2.10c.; Cold Rolled Shafting, 55 per cent. off in carloads, 50 per cent. in less than carloads; Sleigh Shoe Steel, 1.65c. to 1.75c.; Tool Steel, 7c. per lb. and upward, according to quality. On Tool Steel the mills allow freight east of the Mississippi River. A few mills quote Tool Steel as low as 6c., but do not allow freight.

Skelp.—Fancy prices continue to be asked by Skelp mills that can ship out within a month or so. There is only one mill in the Pittsburgh district rolling Iron Skelp, and it is said to be sold up for three or four months. Eastern mills quote Sheared Skelp at 2c. and Grooved Iron at 1.85c. to 1.90c., the freight to Pittsburgh being about 15c. For delivery within 30 days we quote Skelp as follows: Grooved Iron Skelp, 2.05c. to 2.10c., and Sheared, 2.10c. to 2.15c. Grooved Steel Skelp is about 1.90c. to 2c., and Sheared 2c. to 2.05c.

Tubular Goods.—Prices on Pipes and Tubes have advanced from 20 to 30 per cent., and one of the leading independent mills has issued a new price-list, under date of August 21, calling for an average advance of 25 per cent. Jobbers' associations in different cities have advanced prices, in some cases two or three times. In the present condition of the market it is impossible to quote, there being such a wide range in prices. The leading Tube interest has not changed its prices.

Coke.—The strike is affecting the Coke trade and last week output in the Connellsville region fell off 27,000 tons, being 210,328 tons. We quote strictly Connellsville Furnace Coke at \$1.75 to \$2 a ton, and 72-hour Foundry at \$2.25 to \$2.50 a ton. We quote Main Line Furnace Coke \$1.50 to \$1.60, and Foundry at \$1.75 to \$2 a ton.

New York.

New York, August 28, 1901.

Pig Iron.—As yet the orders from a leading consuming interest in this section have not been placed and the market has been very quiet. We quote: Lehigh, Schuylkill and Virginia Irons, No. 1, \$16 to \$17.50; No. 2 X, \$14.75 to \$15.75; No. 2 Plain, \$14 to \$14.50; Gray Forge, \$14 to \$14.50; Tennessee and Alabama brands, No. 1 Foundry, \$14.50 to \$15; No. 2 Foundry, \$14.25 to \$14.50; No. 1 Soft, \$14.50 to \$15; No. 2 Soft, \$14.25 to \$14.50; No. 3 Foundry, \$13.25 to \$13.50; No. 4 Foundry, \$12.75 to \$13.25; Gray Forge, \$12.75 to \$13.

Steel Rails.—The market continues quiet. It is estimated that thus far about 100,000 tons have been sold for next year's delivery, some of the large Western systems, like the Atchison, Topeka & Santa Fé and the Chicago & Northwestern, having taken lots of 20,000 to 25,000 tons each. We quote \$28 for Standard Sections, \$33 to \$33.50 for Girder Rails, and \$22 to \$23 for Relayers. We quote Spikes, 1.80c. to 1.85c.; Splice Bars, 1.50c. to 1.60c.; Hexagon Track Bolts, 2.65c. to 2.70c., at mill.

Finished Iron and Steel.-Quite a nice amount of structural and bridge work is being taken throughout the country. Among the bridge orders recently placed are 3000 tons for the Lackawanna, upward of 4000 tons for the Pennsylvania system, a number of spans for the Northwestern and 750 tons for the Rock Island. In the Pittsburgh district four manufacturing plants have called for 4500 tons, and Philadelphia is in the list with 600 tons for a theater. The American Bridge Company have taken a number of highway bridges for New York State and for a 400-ton structure in Michigan. We quote as follows at tidewater: Beams, Channels and Zees, 1.75c. to 1.80c.; Angles, 1.75c. to 1.80c.; Tees, 1.80c. to 1.85c.; Bulb Angles and Deck Beams, 2c.; Sheared Steel Plates are 1.80c. to 1.85c. for Tank, 1.90c. to 1.95c. for Flange, 2c. to 2.05c. for Fire Box. Charcoal Iron Plates are held at 2.25c. for C. H. No. 1, 2.75c. for Flange, and 3.25c. for Fire Box. Refined Bars are 1.58c. to 1.60c.; Soft Steel Bars, 1.621/2c. to 1.65c.

Metal Market.

NEW YORK, August 28, 1901.

Pig Tin.—Owing to the heavy arrivals of the last week, spot has become plentiful and prices have slowly declined. The drop in prices came in small fractions each day, the total decline now being about 1c. lower than last week's prices. To-day's closing prices were 25½c to 25¾c. for spot and August, 25½c. asked for September and 25c. to 25¼c. asked for October. The London market was very quiet, and prices were steadier than here. At the close to-day the market was quoted £116 2s. 6d. for spot and £112 for futures. On the whole, business was not active in any quarter at any time during the week.

Copper.—No new developments are to be reported. The market is dull and prices are nominally quoted 16½c. for Lake and 16c. to 16½c. for Electrolytic and Casting. The exports thus far this month are small, amounting to about 4800 tons, while the imports during the same period foot up to 4500 tons. The London market experienced a slight rally on the strength of rumors of an international combination, which have since been denied and are now believed in the trade to have been circulated with stock jobbing ends. The market in London closed easy to-day at £66 10s. for spot and £66 17s. 6d. for three months' futures. Best Selected now stands £73 5s., an advance of 5 shillings over last week's figure.

QUOTATIONS OF IRON STOCKS DURING THE WEEK ENDING AUGUST 28, 1901

Cap'l Issued.		Thursday.	Friday.	Saturday.	Monday.	Tuesday.	Wednesday.	Closing	s. Sales.
\$10,000,000	Am. Bicycle Co., Com				*****				
20,000,000	Am. Blcycle Co., Pref			*****	*****				
10,000,000	Am. Bicycle Co., Bonds			*****		*****			
29,000,000	Am. Car & Foundry, Com	29 -29%	29%-30	301/4-31%	3114-311/8	31 -31%	301/2-31	301/4	12.300
29,000,000	Am. Car & F'ndry, Pref.§	-85	8514-8514	85%-86%	87 -8714	871/8-871/9	-87	87	4,900
7,500,000	Bethlehem Iron†			*****					
15,000,000	Bethlehem Steel ##		*****						
7,974,550	Cambria Iron, Phila.*		-471/6		-481/4				125
45,000,000	Cambria Steel*	241/25%	251/2-26%	261/2-261/8	26%-27%	271/8-273/8	27%-28%	281/4	54,300
17,000,000	Colorado Fuel & Iron		971/2-98	97%-98%	97%-98	971/2-98			3,800
24,410,900	Crucible Steel, Com	*****		*****					
24,399,500	Crucible Steel, Pref			*****	*****				
1,975,000	Diamond State Steel \$ \$	- 2%	- 2%	2%- 2%	- 3	21/6- 3			880
15,000,000	International Pump, Com	421/6-42%	42%-43%	43%-43%	431/4-431/4	43%-441/2	44 -44%	441/2	7,400
8,850,000	International Pump, Pref		84 -85%	-86		86 -8614			800
11,000,000	International Silver								
10,750,000	Penna., new, Com., Phila								
16,500,000	Penna., new, Pref., Phila.§.						-88		200
12,500,000	Pressed Steel, Com	-42	-42	-421/2	-43	-42%	421/2	421/4	1,200
12,500,000	Pressed Steel, Pref					-83	83 -84	84	500
27,191,000	Repub. Iron & Steel, Com	21 -211/4	2114-2114	211/2-211/2	20%-211/2	191/2-211/4	1814-1954	191/4	32,300
20,306,900	Repub. Iron & Steel, Pref		75%-761/4	76 -761/4	75 -7614	7314-751/8	72 -731/2	7314	18,890
7,500,000	Sloss-Sheffield S. & I., Com.	-301/2			311/2-32		-32	32	500
6,700,000	Sloss-Sheffield S. & I., Pref. §		-80						200
20,000,000	Tennessee Coal & Iron	631/2-647/8	64%-67%	671/2-68	67 -681/4	65 -671/2	6514-66%	651/2	27,300
1,500,000	Tidewater Steel		- 61/2		- 61/2				300
510,361,300	U. S. Steel Co., Com.	42%-431/4	431/2-44	44 -44%	44%-45%	441/4-451/2	441/2-451/2	45	177,000
508,511,200	U. S. Steel Co., Pref.	921/2-931/4	9314-9314	93%-941/2	941/2-951/4	94 -951/4		9414	96,000
1,500,000	Warwick I. & S.		- 71/8	*****					200

Preferred stocks 7% cumulative unless otherwise stated. § 7% Non-Cu. §§ New stock. | Par \$10. ‡‡ Par \$50, \$1 paid in. || Authorized Capital \$550,000,000 Common; \$555,000,000 Preferred; *Par \$60. †6% guaranteed by Beth, Steel Co. Late Philadelphia sales by telegraph. ¶ Exdividend.

Bonded Indebtedness: American Bicycle Co., \$10.000.000 sinking fund gold debentures 5%; Cambria Iron Co., guaranteed 4% per annum on \$50 par by Cambria Steel Co.; Cambria Iron Co., \$218.000.6% debenture 20-year bonds, 1917, payable option 5 years, assumed by Cambria Steel Co.: Diamond State Steel Co., property leased from Diamond State Steel Co. at 4% on \$1.000,000, \$7.50 on Steel stock paid in, total capital \$2.000.000; International Pump: Blake & Knowless S. P. Co. \$1.000,000 6%; Tennessee C., I. & R. R. Co., \$8.00.000 f. \$1.114,000 f. \$1.000,000 f. \$2.000,000; International Pump: Blake & Knowless S. P. Co. \$1.000,000 6%; Tennessee C., I. & R. R. Co., \$8.000,000 f. \$8.000,000 f. \$1.114,000 f. \$1.000,000 f. \$1.000,000,000 f. \$1.000,000 f. \$1.000,0

Pig Lead—Remains steady and unchanged. Business, while not being reported as brisk, is not altogether dull. The American Smelting & Refining Company continue to quote on a basis of 4.37½c., New York, and 4.32½c. f.o.b. St. Louis. London has improved somewhat, quotations to-day coming £11 13s. 9d.

Spelter.—Business has picked up considerably and the market has taken on a firmer tone. Spot is not so plentiful and was quoted to-day 4c. September and October were quoted 3.95c. St. Louis still remains easy at 3.80c. In the meantime London has declined 2 shillings and 6 pence, the closing price to-day being £17.

Antimony—Has experienced no change, either as to price or condition of business. Hallett's is held at 8½c. to 8¾c. and Cookson's, 10¼c. Other brands are quoted 8¼c. to 8½c.

Nickel—Is unchanged at prices which have ruled for some time, being on a basis of 60c, for lots not covered by yearly contracts.

Quicksilver.—There is no change. Prices are \$51 per flask of $76\frac{1}{2}$ lbs. in lots of 50 flasks and more. London is quoted £9.

Tin Plate.—Further indications pointing toward a settlement of the Steel strike have again allayed the fears of consumers, and during the last week business has been extremely quiet. There was nothing of the rush which has been witnessed for some weeks past, owing to the fear of a prolonged shutdown of the mills. Most consumers are fairly well supplied, as far at least as immediate wants are concerned. Merchants are still asking fancy prices for lots which are needed for immediate consumption. Only 5000 boxes arrived this week from England, the consignment coming from Liverpool.

The Bethlehem Steel Company.—Owing to the suit of minority holders brought to restrain the transfer of the Bethlehem Steel Company to the Schwab interest, the purchase money for the stock was not offered until the last moment. The following new board has been

elected: R. P. Linderman, E. T. Stotesbury, E. M. Mcllvaine, Archibald Johnston, George F. Baer, J. P. Ord, Charles McVeagh. The officers are: E. M. McIlvaine, president; A. N. Borie, vice-president; H. S. Snyder, secretary; A. N. Ciaver, treasurer; Archibald Johnston, general superintendent. All of the directors are new with the exception of Mr. Linderman and Mr. Stotesbury, who served on the old board. George F. Baer is president of the Philadelphia & Reading Railway Company. E. T. Stotesbury is a member of the firm of Drexel & Co. Archibald Johnston has long been connected with the company.

Iron and Industrial Stocks.

Under a moderate movement steel stocks showed growing strength until Tuesday, when some weakness developed in the United States Steel issues. In Philadelphia Cambria has been the feature, advancing under large transactions. Gossip has it that the Schoen pressed steel car interests have been acquiring an interest in the property with the plan of developing the car building branch recently started by Cambria.

the state of campia.		
	Bld.	Asked.
E. W. Bliss, common	.145	152
E. W. Bliss, preferred	130	140
Cramp's Shipyard stock	. 79	82
Dominion Iron & Steel Company	25	
Empire Iron & Steel, common	4	5
Empire Iron & Steel, preferred	20	85
National Enam. & St., common	91	25
National Enam. & St., preferred	. 21	8416
New Haven	. 53	6
Otis Elevator, common	. 321/2	34
Otis Elevator, preferred	. 97	98
Pratt & Whitney, preferred	. 85	90
U. S. Cast Iron Pipe Company, common	. 8	81/2
U. S. Cast Iron Pipe Company, preferred	. 33	351/2
U. S. Projectile	.119	
Va. C. I. & C., stock	. 5	7
Va. C. I. & C., bonds	. 38	40
H. R. Worthington, preferred	111	113
American Can Company, common	9474	2514
American Can Company, preferred	7477	
American Can Company, preterred	. 1278	1 274

Westinghouse Machine Company.—Westinghouse Machine Company stock advanced in Pittsburgh on Tuesday from \$52 to \$60, par being \$50. The Westinghouse Machine Company are capitalized at \$2,350,000

and pay 6 per cent. annual dividends. It is reported that earnings of the company have been close to 20 per cent. this year, and that the capital stock is to be largely increased.

The values of the Republic issues have declined quite seriously owing to reports foreshadowing an unfavorable annual report.

Dividends.-The Republic Iron & Steel Company have declared the regular quarterly dividend of 1% per cent. on their preferred stock, payable October 1. Books close September 21 and reopen October 1.

The first dividend on the common stock of the Colorado Fuel & Iron Company has been declared. It is 1% per cent. for the quarter ending June 30, 1901.

The New York Machinery Market.

NEW YORK, August 28, 1901.

As far as the placing of orders is concerned, business has not improved during the last week. There has been an increase in activity, however, in the form of new inquiries. During the week a number have been received which add considerably to the bright prospects for an active fall trade. Some of them appear to bear the earmarks of immediate business, while others simply announce the launching of new projects and seek preliminary data regarding equipment. The general tone of the market tends entirely toward buoyancy, and in all quarters of the trade sanguine expressions regarding the outlook for the near future are to be heard. Prices in all lines remain firm and unchanged.

In the machine tool trade, one of the most interesting topics now on the tapis is the proposed addition of equipment for the New York Navy Yard. Specifications for this work are now being distributed. The bids are to be opened on September 3. Following is a list of the tools required:

One planing and matching machine, to surface both sides and match up to 15 inches wide.

Three improved grindsone troughs, power, with stones 39 inches diameter, 5-inch face.

One 12,000-pound double frame steam hammer.

One 800-pound steam hammer.

One 11/2-pound heading and forging machine.

Two No. 2 electric fans. One 36-inch engine lathe.

One improved pipe threading, cutting and nipple machine, ¼ inch to 2 inches.

One improved pipe threading and cutting machine, with patent adjustable expanding die heads, with interchangeable chasers, threading and cutting pipe 1 to 4 inches.

electrically driven water tool grinders, designed for wheels 14 x 2 inches.

One 60-inch universal radial drill.

Two single-wheel water tool grinders

One electrically driven sensitive drill, to drill holes up to % inch diameter.

One 37-inch boring and turning mill, with two swivel heads.

One 13-inch slotting machine.
One vertical milling machine.

Eight improved portable benches, with vises and the necessary bolts and nuts for securing the vises to the benches.

One cutting-off machine. One two-spindle centering machine No. 2.

One radial drilling machine with swiveling heads.

One suspension drill, back geared, contructed to fasten to the ceiling.

One radial drilling and countersinking machine.
One power plate horizontal bending rolls.
One power plate straightening rolls, having capacity to straighten 1/2-inch plates 66 inches wide.

One No. 3 turret

One electrically driven shop saw.

One combined punching and shearing machine.

One plate planing machine.

One No. 6 hand press or flanging clamp.

Motors, inclosed, as follows:

Two 5 horse-power motors, not over 1000 revolutions per mino drive a 2½-inch shaft at 175 revolutions per min-Pulleys for motors and line shaft to be furnished.

One 5 horse-power motor, not over 1000 revolutions per min-ute, to drive 1½-inch diameter countershaft at 300 revolutions per minute. Pulleys for motor and countershaft be furnished.

One 5 horse-power motor, not over 1000 revolutions per minute, to drive 1½-inch diameter countershaft at 150 revo-lutions per minute. Pulleys for motor and countershaft to be furnished.

One 5 horse-power motor, not over 1000 revolutions per min-

ute, to drive 11/2-inch diameter countershaft at 175 revolutions per minute. Pulleys for motor and countershaft to be furnished.

One 7 horse-power motor, not over 800 revolutions per minute, to drive a 2½-inch countershaft at 120 revolutions per minute. Pulleys for motor and shaft to be furnished.

One 7 horse-power motor, not over 800 revolutions per minute, to drive 11/2-inch diameter countershaft at 125 revolutions per minute. Pulleys for motor and countershaft to be

One 7½ horse-power motor, not over 800 revolutions per min-ute, to drive 1½-inch diameter countershaft at 175 revolutions per minute. Pulleys for motor and countershaft to be furnished.

One 10 horse-power motor, not over 800 revolutions per minute, to drive 1½-inch diameter countershaft at 355 revolutions per minute. Pulleys for countershaft and motor to be furnished.

One 20 horse-power motor, not over 800 revolutions per minute, to drive a main line shaft at 120 revolutions per min-ute. Diameter of shaft 2½ inches. Pulleys for motor and shaft to be furnished.

Foremost among the railroads which are now in the market for machinery equipment is the New York Central & Hudson River. Three good sized projects of this road are now commanding the attention of various branches of the machinery trade.

At Weehawken, N. J., large machine repair and car shops will be erected, as well as the great grain elevator of which previous mention has been made in this column. The machine shop is to be a two-story affair of modern center aisle construction, 242 x 60 feet. It will be equipped with a complete line of new machine tools. The car shop will be of almost similar dimensions, and a new power station will be built for operating both plants. Inquiries regarding machine tools are now being made by the engineering department, of which W. J. Wilgus is chief, with offices in the Grand Central Depot, New York.

The grain elevator, which also comes under the supervision of Chief Engineer Wilgus, is now being constructed. Arrangements are being made for the purchasing of the machinery required in the equipment of the structure. The following machinery will be required: One iron marine leg, eight iron receiving legs, eight iron shipping legs, seven iron elevator legs, one iron screenings leg, one conveyor for cupola, eight conveyors for first story, 32 power shovels, 14 steel cleaning machines, eight receiving scales, eight shipping scales, seven cleaning scales, one electric passenger elevator. one power car puller, 23 A. C. motors of 100 horsepower each, two 60 horse-power A. C. motors, 17 40 horse-power A. C. motors, one 10 horse-power A. C. motor, one switchboard and wiring, complete insulation inclusive of generator for a lighting plant of 328 incandescent lamps of 16 candle-power each and 78 incandescent lamps of 32 candle-power each, one dust collecting system, consisting of four steel plate exhaust fans, 18 dust collectors, 72 floor sweeps and complete system of piping in connection with same; one system of fire service piping with 48 outlets.

At Oak Grove, Pa., the New York Central system is to establish a coal and hose house and wheel shop. The latter building will be equipped with a full line of machinery for the production of car wheels, while the former building will be equipped with coal conveying machinery of improved type. Division Engineer G. W. Vaughn of Jersey Shore, Pa., is now receiving estimates for the construction of the buildings.

The Philadelphia & Reading Railroad are inquiring in the machinery district for a number of machine tools to be installed in various of their machine and repair shops. One of the most notable of improvements in this line now in hand by the company is the erection of a large round house, with machine shop and boiler house in conjunction, at Rutherford, Pa. The contract for the erection of the buildings has just been awarded.

In New Jersey one of the most important undertakings now under way is the erection of a new plant at Camden, N. J., by the Whitney Car Wheel Company, who were recently incorporated under New Jersey laws. We are advised that George Plowman, architect and engineer, of Betz Building, Philadelphia, has prepared plans and is to supervise the construction and the installation of all machinery. The plans provide for a foundry

100 x 200 feet, an engine, boiler and generator room 90 x 80 feet, a two-story machine and pattern shop 100 x 70 feet, and other buildings to be used for storage and office purposes. The buildings will be located on a plot 400 x 450 feet, bounded by Eleventh and Twelfth streets and Chelton avenue and Atlantic City Railroad, recently purchased from the New York Shipbuilding Company. company are said to have offices in the Betz Building, Philadelphia.

We are informed that work is nearing completion on the 200-foot extension to the new machine shop of the General Electric Company at Schenectady, N. Y. While this concern are constantly in the market for machinery and tools there is an extraordinary activity in the purchasing department now in view of the equipment of this new extension.

A letter to a party in the trade from H. C. Kramer, City Clerk of Camden, N. J., purports that he is attorney for a firm expecting to build a large steel tool factory at

Specifications have been issued and bids are being received for the power house and sub-station equipments for the Pittsburgh, McKeesport & Connellsville Railway Company. The plant will be of about 4500 horse-power and will contain boilers, engines, condensers, generators, transformers and all accessories to a modern high tension electric railway system. Bids are to be in by September 19. The specifications have been issued by Westinghouse, Church, Kerr & Co. of 26 Cortlandt street, who are the engineers in charge of the work. Bids are being received by M. R. McAdoo, general manager of the railway company, Bank for Savings Building, Pittsburgh, Pa.

Arrangements are being perfected by the Edison Phonograph Works of West Orange, N. J., for the erection of an extension which is to be used for the building of a newly designed stationary motor. Specifications are now being prepared for a large quantity of machine tools, which will be required in connection with the work.

The New England Pin Company of Winsted, Conn., are purchasing machinery to be installed in an extension which is being built to their plant. A 125 horsepower Brown engine has been purchased from Woolston & Brew of 39 and 41 Cortlandt street. Orders for the pin making machinery have not been placed as yet.

The Manhattan Electrical Supply Company of 32 Cortlandt street are building an extensive addition to their plant, at Jersey City, N. J. The new building is to be four stories high, the three upper floors to be fitted out with machine tools. Specifications for these tools are not out yet. A 200 horse-power engine has been purchased from Hoovens, Owens & Rentschler of 39 and 41 Cortlandt street.

The Safety Insulated Wire & Cable Company of 229 West Twenty-eighth street, New York, have purchased the engine for their new plant, which is now in course of erection at Bayonne, N. J. The order was awarded to the Whitehill Engine Company of Newburg, N. Y.

The order for the two 1500 horse-power cross compound condensing engines to be installed in the rebuilt plant of the National Wire Company of New Haven, Conn., has been placed. We understand that the Filer & Stowell Company of Milwaukee received the con-

Through the Babcock & Wilcox Company, John H. Meade & Co. of 11 Broadway have secured the order for the coal and ashes handling machinery to be installed in the new Sydney street railway electric plant, now being erected at New South Wales. As previously stated in this column, the Babcock & Wilcox Company have received the order for the bollers to be employed in this plant. The boiler equipment will be of 4500 horse-power.

Proposals will be received at the bureau of yards and docks, Navy Department, Washington, until October 12, 1901, for constructing a plant for receiving, storing and delivering coal at the Navy Yard, New York. Appropriation, \$60,000.

Proposals will be received at the office of the Supervising Architect, Treasury Department, Washington, D.

C., until September 10, 1901, for the installation of an ash handling apparatus for the United States Custom House and Post Office at St. Louis, Mo.

Bids for installing pumping machinery on suction dredge were received by Capt. J. C. Sanford, United States enginer, Charleston, S. C., on August 13, were as follows:

Item 1, delivery, New England States; 2, Middle Atlantic States; 3, South Atlantic States; 4, Gulf States.

Wm. R. Trigg Company, Richmond, Va., item 2, \$32.050.

R. G. Packard Company, New York, N. Y., item 1, \$47,200; 2,

\$47,200; 3, \$47,200; 4, \$48,000. Camden Iron Works, Camden, N. J., Item 1, \$37,540; 2, \$37,413; 3, \$37,625; 4, \$37,795.

3, \$37,620; 4, \$37,793.

Morris Machine Works, Baldwinsville, N. Y., item 1, \$38,862;
2, \$39,128; 3, \$39,383; 4, \$39,580.

The Bucyrus Company, South Milwaukee, Wis., item 1, \$32,300;
2, \$32,050; 3, \$32,500; 4, \$32,300.

Iowa Iron Works Company, Dubuque, Iowa, item 4, \$28,500.

Bids for furnishing a 120-ton derrick at the Navy Yard, Norfolk, Va., were received by the chief bureau of yards and docks, Navy Department, Washington, D. C., on August 17, 1901, as follows:

Brown Hoisting & Machinery Company, Cleveland, Ohio,

\$69,950.

Snare & Triest, New York City, \$64,950.

Merritt & Chapman, New York, N. Y., \$69,500.

New Publication.

GUIDE TO BRONZING AND ENAMELING. By James Croke. Price 25 cents. Size, 51/2 x 7 inches; 37 pages.

This little book, which in a second and revised edition has just been published, should be of special interest to steam fitters, as it is largely devoted to the The first section deals generdecoration of radiators. ally with the subject of bronzing, and gold, copper, brass, aluminum and silver bronzes, with information regarding their various qualities, and the liquids and methods that must be used to apply them so as to preserve their color, especially when used on radiators. Suggestions are also given for the use of bronzes of different colors together to get the best effect. Patent bronzes and paints are also discussed. The use of gold paint and picture frame gilding and bronzing by dipping are explained, as well as bronzing for printers. Another section of the book is devoted to enamels and enameling. as applied to furniture, terra cotta articles, picture frames, and to bathtubs and radiators, with instructions. how to mix the different colored enamels to get the desired tint. The coating of articles with enamels, commonly known as japanning, is explained, with instructions about the use of ovens and their proper tempera-

J. E. & A. L. Pennock, Philadelphia, Pa., are to erect for the Mutual Life Insurance Company of New York a ten-story office building at 1011 Chestnut street, Philadelphia, Pa. The structure will be 24 feet 6 inches by 57 feet, with a 24 foot 6 inch by 40 foot rear addition. The building is to be of granite and brick with steel frame. The estimated cost is said to be about \$500,000.

The statistics of Chinese trade for January 1 to-March 31, 1901, show a remarkable gain in the imports of American kerosene oil as compared with Russian oil. In the period named 5,708,160 gallons of American oil were imported, as compared with 2,429,330 gallons of Russian. In the first quarter of 1900 the figures were: American, 4,231,250 gallons, and Russian, 7,859,720 gallons; and in the first quarter of 1899 American, 3,328,750 gallons, and Russian, 3,076,920 gallons.

The new North German Lloyd steamship "Kronprinz Wilhelm." built by the Vulcan Shipbuilding Company, at Stettin, made a preliminary trial trip in the Baltic Sea on Monday, when she developed 27,000 horse-power with her engines running at about three-quarters speed. It is expected that she will be a fraction of a knot faster than the Hamburg-American liner "Deutschland," holds the transatlantic speed record.

St. Louis Machinery Market

St. Louis, Mo., August 26, 1901.

The machinery business in this territory is in a most prosperous condition. The unanimous report is that orders are heavier, inquiries more numerous and profits larger. It is noted in many lines that orders usually placed in other markets are coming to St. Louis. This is brought about chiefly through the labor troubles elsewhere, especially in Chicago, making the question of delivery a very uncertain quantity in those places, and purchasers, always in a hurry during prosperous times, are placing their orders with manufacturers whom they feel have a fair chance of making immediate deliveries. Thus it is that St. Louis, through its peaceful relations with the labor unions, has been reaping benefits. There are no labor troubles here in any lines of industry. One of the chief consequences of this is the fact that the labor market in the skilled trades is overcrowded at the present time, strikers at other points having found their way to this city. The pattern making shops seem to be the exception: they are all crowded with work, and labor in that line is scarce.

Business in general in this city is on the move, and it is not of a speculative nature. New factories are being built, additions and improvements made in all lines. Twenty-eight new buildings, none costing less than \$30,000, are now in course of erection. This is not a boom; it is the result of commercial expansion, and the machinery and iron interest are among the first to feel this prosperity.

One feature about the local market that has a buoyant influence is the progressive work that is being done in connection with the 1903 World's Fair, to be held in this city in commemoration of the Louisiana Purchase. The work of organizing the company has about been completed, and it is expected that active work will soon be commenced. The work has nearly all been subdivided and placed in the hands of the proper committees, and the details of the general plan are gradually being arranged. The plans for the general arrangement of the buildings and the grounds have nearly been completed, and the indications are that ground will be broken and work commenced on the buildings within a very short space of time. thousand acres of ground have been secured in Forest Park, and with a possible \$25,000,000 to spend on the Fair proper, to say nothing of the vast public improvements that are contemplated, it is no wonder the influence on the local markets is so great.

There is ample evidence to show that the much talked of drought through the corn belt is greatly overestimated. Rain has been very general over this district during the past month. The Whitman Agricultural Company, whose business, it would seem, would be affected by drought, report an unprecedented demand for all classes of farm implements. Their inquiries are unusually heavy, with an immediate delivery clause added to each order. Their plant is running to its full capacity and even at that they are unable to make deliveries fast enough. The chief demand is for hay presses.

The demand for heavy power machinery is strong. Competition, however, in that line is very close, and while the local shops are well stocked with orders the profits in this class of machinery are far from what they should be. The St. Louis Iron & Machine Works have just closed contracts for a number of large Corliss engines, the aggregate horse-power of which will amount to about 7000. Among these orders are two 1200 horse-power engines to be installed for the St. Louis, Belleville & Suburban Railway, at Belleville, Ill. This shop is also working on a large contract for power machinery, just received from a large rolling mill in the Pittsburgh district. Inquiries with this concern are very numerous, and from present indications they expect to continue running at their full capacity for many months. Orders for small power machinery are constantly being filled, the demand being very steady.

The Medart Patent Pulley Company, no doubt the largest power transmission machinery manufacturers

in the West, report their business in a most satisfactory state. The volume of their business during the past three months has greatly increased, but the aggregate amount 'n dollars and cents is much lower. The reason for this is that the cost of material has decreased, and this, of course, has had its effect upon the selling price of their output. Pig iron, for which they formerly paid \$22 and \$23, they are now buying for \$13 per ton. This firm have been greatly helped by labor troubles in other markets. While they cannot meet the demand for immediate delivery in all cases, the fact that their shop has been able to run continuously through all the recent labor trouble helps them materially in securing such orders, this being a point their competitors in the East and in Chicago have been unable to overcome. As a result of this rush of new orders, they have been making vast improvements throughout their works and have almost doubled their equipment. These additions will so materially increase their output that they are contemplating doing away with all night work, results from which work, under the best conditions, are never as good as that from day work. The increase in the number of orders received by this firm over the same period last year is about 15 per cent.

The Schoellhorn-Albrecht Machine Company report the demand for small hoisting engines very good. This firm are at present furnishing the power equipment for four steamboats. They report the demand for firstclass second-hand power machines far in excess of the supply, and they had to refuse many orders on this account.

J. W. Wright & Co., local agents for the Atlas engine and many special machines, report an increasing demand for engines. The demand is exceptionally good from the cotton producing States, and the greatest difficulty this firm have with this rush of business is the inability of the works at Indianapolis to make prompt deliveries. The business of the Atlas Engine Works has increased so much within the past month that even though the capacity of their works has been doubled, they are still unable to meet the demand.

The W. C. Johnson & Sons Machine Company report business much improved over last month, the demand for large tools being extra good. This firm usually carry about as large a stock of miscellaneous tools as any firm in town. Deliveries have been so poor from the East that they have sold out their stock lower than for some years past. This firm also report an increasing demand for good second-hand machinery.

The manufacture of machine tools is becoming an important industry in St. Louis. One firm who are making great headway in this line are the Standard Railway Equipment Company. Their business of late has increased so rapidly, both at home and abroad, as to surpass all their expectations. They have just closed a large contract with the Russian Government for pneumatic riveters, to be used in the shops of the Government railways. Orders for pneumatic machines have also been received from the Cambria Steel Company and the Maryland Steel Company, to be used in shell work in connection with their shipbuilding interests. Owing to the overcrowded condition of the present works of this company, they have commenced the erection of a new factory in East St. Louis, which they will occupy about January 1. They have just placed orders for 12 new turret machines and many smaller tools, which, when they are installed, will about double their present capacity. Their new quarters will be a one-story building about 120 x 100 feet.

M. F. Williams & Co., manufacturers of much special machinery, report a most encouraging outlook for trade. The chief specialties of this concern are their patent crushers and pulverizers. They have just established branch houses in London and Paris. The president of the company was abroad most of the summer, and, as a result, they are making foreign shipments almost daily. This company have just placed a new friction clutch pulley on the market, and they report a good business in that line.

The demand for mining machinery is exceptionally good. The Arthur Fritsch Foundry & Machine Com-

pany, who have entered extensively into this line of business, report the volume of their business greater than at any time since the organization of the company. They have just doubled their capitalization and are now incorporated for \$50,000. They have just booked many large orders for their patent crushers and classifiers, their largest orders coming from the Butte & Boston Mining Company, the Diamond Mining Company and the Granite Bimetallic Mining Company. They have recently completed a large Government order for suction valves for dredge work at Galveston. Orders for this company's new hydraulic pneumatic jigs are also very heavy, the mining interests being the chief purchasers.

Most of the copper equipment for the numerous breweries now being erected in the West is being furnished by the Seibel-Suessdorf Copper & Iron Mfg. Company. At present they are crowded to their full capacity. The largest orders they now have on hand call for the complete equipment of the new Imperial Brewery, at Kansas City, and the Empire Brewery, St. Louis. This firm are also making extensive repairs at the Orizaba City Brewery, Mexico. Their perforated metal department is crowded with orders from coal, lead and zinc mining companies.

There is hardly an idle metal working plant in the city; in fact, improvements and extensions of some kind seem to be in progress at all concerns. The National Enameling & Stamping Company have just expended \$1,500,000 on improvements and added equipment in their local plants. The improvements made in the local plants places them right along with the best in the country. The principal improvements were made in the steel department. The company are in a flourishing condition, being well stocked with future delivery orders.

Plans have been drawn for a new foundry structure to be added to the former McDonald Foundry Works, which were partly destroyed by fire last winter. The new building will cost about \$20,000, and the name of the concern will probably be changed to the St. Louis Foundry Company.

The Moon Elevator Company report their business in a most prosperous condition. Their shop is running to its full capacity and new orders are being received daily. The great amount of building being done here has also helped this firm materially and is responsible in the main for the increased demand for elevators. Among their recent customers the following appear: Bucks Stove & Range Company, the Empire Brewery · Company, J. B. Legg Company, Thos. Lowery, the Thirteenth Street Realty Company, the Locust Street Building Company, the La Prelle Williams Shoe Company, the Banner Buggy Company, the Tenth Street Realty Company, the Standard Stamping Company, the Jewish Hospital Company. These purchases represent 18 elevators about equally divided between passenger and freight. The Moon Elevator Company also have eight orders for elevators pending. In addition to elevators this company are rushed with orders for power belt machinery.

The Barry-Wehmiller Machine Company report a very heavy business, especially in the mill furnishing line. They are at present finishing the equipment of four flour mills. This firm are also engaged in the manufacture of several lines of miscellaneous machinery and are one of the progressive and growing firms in this district. They are furnishing much of the special machinery to be used in the equipment of the new Empire Brewery Company, now being erected in

Deeds have been placed on record at Uniontown, Pa., by which J. V. Thompson and others conveyed to the Sharon Coke Company 1300 acres of coal and 200 acres of surface in Fayette County, the consideration being \$663,463. The Sharon Coke Company are putting down two shafts to develop this coal. It will be shipped to Sharon, Pa., where it will be made into coke for use in the blast furnace of the Sharon Steel Company, who own the Sharon Coke Company.

The Cleveland Machinery Market.

CLEVELAND, OHIO, August 26, 1901.

Manufacturers and dealers of machine tools all agree that business has shown a decided improvement during the past ten days or two weeks. In many cases July was rather quiet, while in others the business continued about normal, but very recently there appears to have been a marked increase in the number of orders and inquiries. A number of prominent people say this will be the best August in a number of years, and it is predicted that the business this fall will be very satisfactory, that is, providing the steel labor troubles are speedily settled. This phase of the situation appears to be viewed with comparative complacency, and it is making comparatively little difference with the immediate plans of the majority of the people. Were it not for the difficulty in securing prompt deliveries of building material and a searcity of certain kinds of sheet, the trouble would not be noticed. The delay in deliveries of building material. if long continued, is likely to cause expensive delays in projects under way. Several concerns who are desirous of completing factories and additions as early as possible find their work at a standstill because of this contingency, and it is generally admitted that the trouble must be settled in the near future or the prosperous condition of the country will be imperiled.

The Cleveland Punch & Shear Works Company commenced Monday working a night shift, running a total of 22 hours per day, in order to take care of business which accumulated during their machinists' strike. Shipments have not been large during the past month, but orders and inquiries have increased remarkably during the past two or three weeks. They have recently shipped the following: One splitting shear to Monterey, Mexico; one splitting shear to Aguas Calientes, Mexico; orders taken through M. Guggenheim's Sons. New York: two 36-inch throat punches to the Shipowners' Dry Dock Company, Chicago; one 12-foot arm radial drill to the Toledo Bridge Company. Toledo; one style T horizontal punch to the American Car & Foundry Company, Detroit, and one 36inch coping punch to the Columbia Bridge Company, Pittsburgh. During the past 30 days they have received orders for the following large tools: One 15-foot arm Cleveland radial drill to the Vereinigte Kammerichsche Werke Actiengesellschaft, Berlin; one 50-inch rotary planer to the Pennsylvania Steel Company, Steelton, Pa.; sold through S. M. York Company, Cleveland; one 42-inch throat punch, and one 12-inch throat horizontal punch to the Girard Boiler Mfg. Company, Girard, Ohio; one No. 4 bar shear to the Columbus Forge & Iron Company, Columbus, Ohio; one set 12-foot bending rolls to the Great Northern Railway Company, St. Paul, Minn.; one set 10-foot bending rolls sold to John M. Pearson, Allegheny, by L. H. Gibson, Pittsburgh; one 20-inch throat power punch to the Standard Harrow Company. Utica, N. Y., and one set 10-foot bending rolls to E. Keeler Company, Williamsport, Pa.

The Cleveland Crane & Car Company, manufacturers of electric traveling cranes, state that there has been very little falling off in business during the summer months and inquiries are now increasing. Last week they shipped a 30-ton four-motor electric crane with 75-foot span to the J. S. Coxey Foundry Company, Mt. Vernon, Ohio; a 15-ton three-motor crane with 50-foot span to the Boston Elevated Railway Company, and several smaller cranes to different parts of the country. They have been hindered somewhat through delay in getting prompt deliveries of structural work.

The Chisholm & Moore Mfg. Company have recently made numerous shipments of pneumatic and hand power cranes. They report a very large demand and inquiry for portable pneumatic hoists. They say this has been the best summer in the history of the business and they look forward to a large fall trade.

A new use for ball bearings is described in a circular just brought out by the American Ball Bearing Company, who manufacture ball bearings for all purposes. Three months ago they equipped a large lake steamer with a ball bearing designed to take up the thrust from the propeller shaft. Four-inch balls were used and the bearing was entirely inclosed in a brass sheath, so that

it required no oiling or other attention. It has been found that there is no perceptible wear, and that the steamer is enabled to make 1 mile more per hour, with a saving of 320 pounds of coal per hour. It is figured that the boat will be enabled to make an additional round trip during the season, and the experiment has proven so satisfactory that the company have closed contracts to equip several of the Bradley fleet of lake steamers with the device. The American Ball Bearing Company are furnishing quantities of bearings to machine tool builders, automobile and wagon manufacturers. They are at work on a contract for equipping a number of heavy trucks, and the bearings are the largest ever designed for this purpose.

The Wellman-Seaver Engineering Company are experiencing considerable delay in completing the buildings of their new plant in this city, because of the inability to secure prompt deliveries of structural iron, promised weeks ago. The Wellman-Seaver Company have recently closed contracts for the machine tool equipment of their plant, amounting to nearly \$200,000. The contract was scattered among a number of manufacturers, but it is understood that much of it went to the Niles-Bement-Pond Company.

The Garry Iron & Steel Company say there is a very good demand for their revolving cranes. They have been kept very busy of late on contracts for the buildings of sugar plants being built by the Kilby Mfg. Company. Of late the work has been delayed considerably on account of the delay in getting building material. They say that factories about town are feeling the shortage of sheet, many sizes being very difficult to secure.

There has been considerable activity in electric railway projects of late, and contracts have recently been closed for the equipment of several roads which are being built and financed by Cleveland people. The Western Ohio Railway is tripling the size of its plant and will operate over 100 miles of track from one station. Contracts have been closed for two 750 kw. alternating current generators, nine 150 kw. rotary converters, all of Westinghouse make; two Cooper-Corliss engines and Sterling boilers. The Cleveland Construction Company, who are building the lines of the Little Miami Traction Company and the Maumee & Erie Canal Transportation Company are closing contracts for the equipments of both. For the latter a number of steel canal boats will be purchased, and both companies will require tools for repair shop equipment.

The Cleveland Electric Railway are putting up a large addition to their power house and have placed a contract for a 2500 horse-power Cooper-Corliss engine and a 1600 kw. General Electric Company's generator. They are tearing out all their old boilers and are installing 14 260 horse-power Sterling boilers. The old boilers have been placed in the hands of the Standard Machinery & Equipment Company, this city, and 900 horse-power of this equipment has recently been sold to the National Fire Proofing Company, of Perth Amboy, N. J.

The American Shipbuilding Company now have on hand contracts which fill all their available berths for the season of 1901-1902. Last week they closed a contract with W. A., H. A., and Arthur Hawgood for a steel steamer to cost about \$275,000, making 31 vessels under contract. The boat will be 434 feet over all and 50 feet beam. She will probably be built at the Lorain yards.

The Standard Welding Company are at work on an unusually large contract for electrical welding. The work is being done for the Cleveland City Forge & Iron Company, who have secured a contract from the Japanese Government for 4000 forged steel rings, each 18 inches in diameter, 1¼ inches thick and 4½ inches wide. They are to be used in breakwater construction. The Standard Company are now welding cylinders up to 16 inches in diameter, designed for boilers or range water heaters.

The Brown Hoisting Machinery Company are rushing work on their new plant and expect to have it ready for occupancy by the first of the year. The foundations of the various buildings have been completed, but the structural work is being delayed on account of the steel

strike. The company are at work on a number of large orders for hoisting and conveying machinery, despite the fact they are working in cramped temporary quarters.

The Cleveland Wire Spring Company report that this has been the best summer they have ever experienced. They usually notice a falling off during July and August, but this year the demand has held up steady, being about normal for all varieties of springs. They are preparing to bring out several new lines of specialties.

The Cleveland Machine & Mfg. Company recently organized by R. C. Moodey, E. I. Leighton, Fred Brew and others, have commenced work on a large jobbing machine shop on Hamilton street, in the center of the manufacturing district. They are purchasing considerable new machinery.

The Acme Machinery Company, manufacturers of bolt and nut machinery, say business is holding up about normal, with a slight improvement noticed during the past two weeks. They say the foreign demand shows indication of improvement.

The Cleveland Twist Drill Company say there has been little change in their business this summer. It has continued about equal to that of the spring months, and July and August show decided improvement over corresponding months of last year. Thus far there has been no indication that the steel strike has affected their business.

The S. M. York Machinery Company, dealers, say this has been the best August in several years. Business commenced to pick up shortly after the first of the month and there has been a steady improvement since. Inquiries now coming in indicate a very busy fall trade. They recently sold a good sized order of machine tools to the Ajax Mfg. Company.

According to George H. Bowler, dealer in second hand machinery, the demand for second hand tools has increased surprisingly during the past ten days. The business for August will be several times that of July. The demand is about equal for all kinds of machine tools. Mr. Bowler has just arranged to handle the entire equipment of the Meisselbach bicycle factory at Milwaukee, Wis. The concern were formerly considered the largest bicycle factory in the country, and the equipment consists of about 200 tools; smaller sizes of lathes, planers, shapers, screw machines, &c.

The Oster Mfg. Company, manufacturers of die stocks, report that the demand is not quite as good as last year at this time. Much of their trade has been foreign, and the falling off in Germany, France, and England has been noticeable. Labor troubles have also had an effect. They are bringing out a new machine for threading large pipes which will shortly be placed in the market.

The American Motor Carriage Company, recently organized, have secured quarters at 66 Chestnut street, and are preparing to go into the business on quite an extensive scale, producing steam, gasoline and electric vehicles.

The Kuhlman Car Company, manufacturers of street and railway cars, who have commenced work on an extensive plant at Collingwood near this city, have been buying considerable machinery in small lots, and will require more to complete the equipment of the plant.

The Price of Shafting.—The price agreement between the makers of cold rolled and cold drawn shafting has been terminated by the withdrawal of one of the leading makers and the market for shafting is an open one. Some low prices have recently been made and shafting in carloads may be quoted at 60 and 5 off, delivered, and in less than carloads at 60 off. For some very desirable orders 65 per cent, off has been done. A good deal of tonnage is being placed, the low prices ruling being an incentive to buyers to place orders liberally.

The Lamb Fence Company, Adrian, Mich., have voted to increase their capital stock from \$100,000 to \$200,000 for the purpose of building a 60-ton wire mill. The company have declared a dividend of 14½ per cent. out of their earnings for the past six months.

HARDWARE.

The manufacturer of a good article has his whole mental attitude colored by the necessity of making goods right. As it takes a liberal supply of backbone always to adhere to quality in spite of much temptation to the contrary, the manufacturer sometimes goes to the extreme of refusing to listen to suggestions of change of any nature. Indeed, there is scarcely any business man so tenacious of ideas as the factory man, pure and simple; the man who rarely travels and knows only of the making and but little of the selling of goods. The other side of the story is the one that is usually presented to the dealer. He realizes that articles must have commercial value and adaptation, as well as mechanical excellence. He is in constant contact with the users, whose first call is generally for things of simplicity and cheapness. From his environment it would be only natural to find him at times an opportunist. The manufacturer and he are necessary complements of each other, and that he does so much toward introducing and pushing the sale of the best articles must be taken as a tribute to his judgment and practical common sense.

It is generally recognized by the trade that close buying is one of the essentials to success in manufacturing or in marketing goods. Those who disregard this principle and buy at higher figures than their competitors are not, in these days of earnest strife for business, likely to continue long in the field. They certainly cannot take their place among the live and enterprising houses that are making themselves a position of recognized importance in the trade.

In the larger houses the matter of buying is usually looked after very carefully, and their organization is such as to secure the lowest obtainable prices. The position of buyer is recognized as calling for the best abilities, and competent men with the requisite training find in this department a fine field for their skill and judgment. As a result the important Hardware houses of the country are, with scarcely an exception, able to obtain the low prices to which they are entitled. Where there are exceptional qualifications in the personality or methods of the buyer many minor concessions in prices or terms are secured which are, in the aggregate, of considerable importance.

Among the smaller merchants there are many who give adequate attention to this matter and are known as close and judicious buyers, able in many cases to obtain lower prices than other houses of similar position, because intelligently and persistently they are endeavoring to buy to the best advantage. Their knowledge of the markets and their relations with manufacturers and jobbers are such that they are well posted and in a position to buy advantageously. Notwithstanding the fact that their business is of only moderate volume, the time and labor thus expended are found to be more than justified by the results. There are, however, some merchants who pay much less attention to their buying, being content to pay such prices as are regularly asked them, without attempting to sound the market or obtain lower quotations. They are satisfied with the treatment they receive from the few houses with whom they deal, and are apparently indifferent to a possible saving of 5 or 10 per cent., which is within their reach and is effected by their more painstaking competitors. They sometimes justify this course by referring to their business as small, when it would be more to the point to regard the smallness of their trade as the result of their lack of good business practice in this and other closely related matters.

In this connection the article in another column, in which the department store is considered in its relation to prices paid by the retail merchant, will be of interest. The writer points out the difficulty which the retailer encounters in meeting such competition, from the fact that the department stores buy at substantially the prices paid by the jobbers, while the retailer is ordinarily obliged to pay a jobber's profit. The article is an admirable presentation of the subject from the standpoint of the retail merchant and deserves careful perusal by all classes in the trade, for the subject is one which touches immediately the interests of the manufacturers and jobbers, as well as the retailers. It is, however, much easier to describe the troublesome features of the situation than to suggest a practicable remedy. In the meantime it is more necessary than ever that the retail merchant make a point to procure his goods at the lowest prices and on the most favorable terms possible.

Condition of Trade.

The directions in which the effects of the steel strike are being felt by the trade are becoming more numerous. The difficulty experienced in getting certain lines of goods, owing to the scarcity of material, is extending to other lines. Delays incident to these conditions are annoying to both jobbers and to their customers, entailing a large amount of correspondence and many explanations. A long continuance of present conditions would, of course, intensify the situation. The active demand for all lines of goods continues under the somewhat adverse circumstances, and is stimulated by them. The outlook for a large fall trade is good, if sufficient goods can be obtained to supply the demand.

Chicago.

(By Telegraph.)

August is making a wonderful record in the volume of business in Shelf Hardware. It is running much in excess of last August, and promises to be the biggest month ever known in the Chicago Hardware trade. This is the more noteworthy when the fact is considered that scarcely an invoice is sent out which does not show a number of shortages placed among back orders. If merchants were able to secure sufficient stocks to cover this shortage their business would be very much larger. The situation is becoming very annoying with respect to Light Sheets and Tin Plate. Dealers are insisting on deliveries on orders placed earlier in the year and refuse to accept any explanations. The jobbers are, of course, unable to furnish these materials when strikes close the mills on which they depend for their supplies, and their customers should be reasonable. Those caught short have plenty of company. Stocks of Tinware, Enameled Ware and Galvanized Goods are running low and assortments are becoming more broken every day. Great inconvenience will be caused from this time forward unless the strike is settled or the manufacturers succeed in starting more of their mills. The demand for Wire Nails and other Wire products is being stimulated by the possibility of a shortage in these lines, and stocks are consequently being rapidly exhausted. The outlook for a continued heavy trade this fall is excellent, as the agricultural regions are in more satisfactory shape, the recent rains having greatly improved the crop prospects. The demand f " Heavy Hardware is large and jobbers in this line are also finding great difficulty in securing enough stock to supply their customers. Manufacturers of Bolts and other staple goods are having much trouble in getting Bars and other rolled material to keep their works running.

NOTES ON PRICES.

Wire Nails.—A large amount of Wire Nails have been distributed during the month of August. The demand continues good, with some irregularity in prices. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. discount for cash in 10 days:

To jobbers in carload lots	 		 		. 8	2.30
To jobbers in less than carload lots	 		 			2.35
To retailers in carload lots	 					2.40
To retailers in less than carload lots	 		 			2.50

New York.—The territory tributary to this point is taking Wire Nails in fair quantities. There is a disposition on the part of some buyers to order in larger quantities than for some time. Quotations are as follows:

To retailers,	carloads	on	dock.	 	 	 \$2,53
Small lots at	store			 		2.60

Chicago, by Telegraph.-Large and small buyers of Wire Nails are thoroughly roused to the possibilities of existing conditions and are ordering very freely for immediate shipment. The American Steel & Wire Company, contrary to reports, have not yet been obliged to close their Joliet Works, having been able to secure a supply of Rods from other localities, but it is, of course, uncertain how long these works can continue in operation without having a regular supply which can be depended upon. The stocks of Wire Nails which had accumulated to some extent have now completely disappeared, and the company are unable to make prompt shipments on the heavy orders which they are receiving. Jobbers are still refusing to take carload orders and are handling their stocks carefully in the interests of their regular customers. Carload lots are quoted at \$2.45 and small lots at \$2.50.

Pittsburgh.—A more active demand for Wire Nails is reported, no doubt due to the advancing prices in raw material, which may possibly lead to higher prices on Nails. We may note, however, that concessions in prices are still obtainable from the larger manufacturers for desirable orders. These concessions are made in various ways, sometimes in the matter of freights, and also by making carload prices on mixed cars of Nails, Wire and Staples, mostly for shipment to Southern points. It is estimated that the independent Wire Nail mills have a capacity for supplying fully one-third of the requirements of the entire country. A good many Nails continue to be shipped abroad. We quote f.o.b. mill, terms 60 days, or 2 per cent. discount for cash in 10 days:

To jobbers in carload lots		 				 \$2.30
To jobbers in less than carload lots						
To retailers in carload lots		 				 2.40
To retailers in less than carload lots						2.50

Cut Nails.—The scarcity of raw material and its increased value have stiffened the Cut Nail market, but without change of quotations. It is difficult to obtain full assortments of Nails from some mills. Quotations are as follows, f.o.b. Pittsburgh, plus the actual freight to point of destination, terms 60 days, or 2 per cent. off in 10 days:

Carload	lots										 									\$2	.00)
Less tha	n car	load	1	lo	ts								 		S	2.	0	5	to	2	.10)

New York.—The market continues without change, the trade taking about the usual proportion of Cut Nails. New York quotations for carload and less than carload lots are based on the above prices, to which Pittsburgh freight is added:

Carload lots on dock			 			 						\$2.13
Less than carload lots	on	dock	 									2.18
From store			 	 			9	2	1	8	te	2 25

Chicago, by Telegraph.—The demand for Cut Nails is very good, comparatively speaking, but is not showing the marked increase which might have been expected under the circumstances now developing in the Wire Nail trade. Small lots are quoted at \$2.35.

Pittsburgh.—There is a moderate demand for Cut Nails, but the market is without special feature. Prices

are a trifle stronger, in view of the higher prices for Steel. Cut Nails continue to be sold f.o.b. Pittsburgh, plus the Tube rate of freight. We quote as follows, f.o.b. Pittsburgh, plus Tube freight to point of destination, terms 60 days, or 2 per cent. off in 10 days:

Carload lots	 \$2.00
	\$2.05 to 2.10

Barb Wire.—There is little, if any, change in the conditions prevailing in the Barb Wire market for some weeks. The demand is active in some sections, while in others it is only moderate. Quotations are as follows, f.o.b. Pittsburgh, 60 days, or 2 per cent. discount for cash in 10 days:

То	jobbers in carload lots, Painted	\$2.60
To	jobbers in carload lots, Galvanized	2.90
To	jobbers in less than carload lots, Painted	2.65
To	jobbers in less than carload lots, Galvanized	2.95
To	retailers in carload lots, Painted	2.70
To	retailers in carload lots, Galvanized	3.00
To	retailers in less than carload lots, Painted	2.80
То	retailers in less than carload lots, Galvanized	3.10

Chicago, by Telegraph.—Manufacturers of Barb Wire are having no relief from the heavy demand. They had begun to catch up when buyers began to fear that important Wire mills might be closed and orders were rushed in which were considerably in excess of the current output. Jobbers are having similar difficulty with their trade and consequently have no stocks in their warehouses. Carload lots are quoted at \$2.75 for Painted and \$3.05 for Galvanized. Less than carloads are quoted \$2.85 and \$3.15 respectively, with these prices firmly held.

Pittsburgh.—In some sections there is a good demand for Barb Wire, while in other places it is very dull. The closing down of several important Wire mills in the West may lead to a diminished supply of Barb Wire in that section. For domestic trade we quote: Galvanized Barb Wire, \$2.90, in carload lots to jobbers, and Painted, \$2.60. Terms 60 days net, 2 per cent. discount for cash in 10 days, f.o.b. Pittsburgh.

Plain Wire.—The mills are still busy satisfying the demand for Plain Wire. Quotations are as follows, f.o.b. Pittsburgh, terms 60 days, or 2 per cent. off for cash in 10 days:

Base sizes.	Plain.	Galv.
To jobbers in carload lots	\$2.25	\$2.65
To jobbers in less than carload lots		2.70
To retailers in carload lots		2.75
To retailers in less than carload lots	2.45	2.85
The above prices are for the base number	ers, 6 to 9). The
other numbers of Plain and Galvanized	Wire ta	ke the
usual advances.		

6 to 9	Base.									 \$0.40	extra.
10	.\$0.05	advance	over	base				٠		.40	66
11		6.6								.40	66
12 and 121/2.		4.6	6.6	6.6						.40	66
13		44	4.6								66
14		64	4.6							.40	66.
15		6.6	66.	6.6						.75	**
16		6.6	5.6	6.6						.75	6.4
17		46	4.6							1.00	6.6
18		66	66	66		*	*			1.00	66

For even weight bundles, 50 pounds and over, 5 cents per bundle advance on above.

Chicago, by Telegraph.—The demand for Plain Wire is heavy, in sympathy with the movement in other Wire products. Carload lots are held at \$2.40, base, and small lots from stock at \$2.50.

Pittsburgh.—We note a continued heavy demand for Plain Wire, and the tone of the market is firm. Some of the mills are still somewhat behind in deliveries. We quote:

To jobbers in carload lots\$2.	25
To jobbers in less than carload lots 2.3	
To retailers in carload lots 2.3	35
To retailers in less than carload lots 2.	45

Galvanized Wire up to No. 14 is 40 cents advance on Plain; Nos. 15 and 16, 75 cents advance, and Nos. 17 and 18, \$1 advance. Terms are 60 days net, with 2 per cent. off for cash in 10 days, f.o.b. Pittsburgh.

Wrought Iron Pipe. — Many manufacturers of Wrought Iron Pipe have withdrawn quotations, while

others decline to accept orders either for immediate or future shipment, owing to their inability to furnish the goods. Local stocks are broken in assortment, but are drawn upon heavily at advancing prices. Quotations are made for immediate acceptance only. The scarcity of Pipe and the advancing market has stimulated buying.

Seat Springs.—The prices of Painted Seat Springs have been advanced by some manufacturers as follows:

																			1	9	e	r	pair.
11/2	X	3,	26	and	sma	ller	0 0	0	 	0		 		 	 9	0	9		9				.48c.
11/2	X	2,	28						 		9				 0			9				0	.56c.
11/2	X	3,	28	and	nari	owe	er						 	 									.75c.

Coil Chain.—Coil Chain has been advanced in price by the Standard Chain Company. Present prices for cask lots, f.o.b. Pittsburgh, are as follows:

3-16	1/4	5-16	3/8	7-16
\$7.75	5.80	4.85	4.00	3.85
1/2	9-16		5%	11-16 to 1
\$3.75	3.55		3.55	3.50

An advance of 25 cents is added in less than cask lots.

Carriage Bolts, &c.—An advance has taken place in the price of Common Carriage Bolts and related goods. Higher prices for labor are being paid, and this gives the market some of its strength. Manufacturers refer to the market as firm at the advanced prices, which are as follows, with the usual additional discount for large quantities:

Common Carriage Bolts65 and 5	%
Machine Bolts with H. P. or C. P. Plain Nuts. 70 and 5	
Machine Bolts with C. & T. Nuts65 and 10	
Machine Bolts without Nuts70 and 15	
Machine Bolts, Blanks	
Bolt Ends with H. P. or C. P. Plain Nuts 70 and 71/2	
Bolt Ends with C. & T. Nuts65 and 121/2	
G. P. Coach Screws	
Cone Point Lag Screws	
Skein Screws	
Forged Set Screws and Tap Bolts 60	
Plow Bolts and Guard Bolts60 and 10	
Stud Bolts	%

Nuts.—The prices on Cold Punched and Hot Pressed Nuts have been advanced by the manufacturers, who are busy and firmly maintaining the prices adopted. The difficulty in obtaining material is an important feature of the situation. Quotations are as follows, with the usual discount for large quantities:

	Off	list.
Cold Punched Plain Blank, Square		55.10
Cold Punchea Plain Blank, Hexagon		5.50
C. T. & R. Blank, Square		5.30
C. T. & R. Blank, Hexagon		6.00
Cold Punched Plain Tapped, Square		4.90
Cold Punched Plain Tapped, Hexagon		5.30
C. T. & R. Tapped, Square		5.10
C. T. & R. Tapped, Hexagon		5.80
Hot Pressed, Square Blank		5.30
Hot Pressed, Hexagon Blank		6.00
Hot Pressed, Square Tapped		5.20
Hot Pressed, Hexagon Tapped		5.90

Glass.—The Co-operative Federation, which is composed of the co-operative Glass factories, arranged some time since with the Pittsburgh Plate Glass Company to take all of the Federation Company's output of Window Glass. The Federation appear to be getting ready to start their factories on September 15, while the American and Independent Glass companies prefer not to begin operations until the stocks of Glass at the factories and in the hands of jobbers composing the National Window Glass Jobbers' Association become considerably reduced. According to reports, the decision as to the time for starting the Glass factories rests with the Federation. The prospects of a large fall demand have not been improved by the steel strike. Quotations remain unchanged, as follows:

Discount.
Less than car lots, from store80 and 20 %
Carloads, f.o.b. factory85 and 5 %
A reduction has been made in the prices on glazing
quality of Plate Glass by the National Plate Jobbers'
Association. The price has been reduced in the East
from 75 to 80 per cent. discount, and in the Middle West
from 771/2 to 75 and 10 per cent. discount. A corre-
sponding reduction is reported to have been made in

all sections of the country. This action was decided upon owing to the unsettled condition of the European market, the low prices ruling abroad, and to check imports, which were affecting the American market unfavorably.

Paints and Colors.—Leads.—Recent reductions in the price of Linseed Oil have unsettled the Lead market to some extent, as grinders are not inclined to make contracts for supplies until the Oil market becomes more settled. Some improvement in the demand for White Lead in Oil is noticed, though confined, for the most part, to small lots. Quotations are unchanged, as follows: In lots of 500 pounds or over, 6½ cents; in lots of less than 500 pounds, 7 cents per pound.

Oils.-Linseed Oil.-Values in Linseed Oil have declined rapidly during the week. On August 22 the price of City Raw was reduced to 65 cents in lots of five barrels or more, and on the 27th inst. to 58 cents. Quotations early in July were 82 cents, the decline in price since that time being 24 cents per gallon. Competition by interests outside the combine and the falling off in the cost of Flax Seed are causes to which the reduction in the price of Oil is attributed. If the trade hold to the opinion expressed by some that Oil is likely to go still lower, demand will not be large until these conditions are realized. According to present reports the Northwestern crop of Flax Seed promises to be large. Quotations are as follows: City Raw, in lots of five barrels or more, 58 cents per gallon; in lots of less than five barrels, 59 cents. State and Western Oil, 55 to 57 cents, according to quantity. Boiled Oil, 2 cents per gallon advance on Raw.

Spirits Turpentine.—The Turpentine market during the week has shown but little fluctuation in prices. As a rule demand has been light and for small lots. Southerns are quoted, according to quantity, at 36½ to 37 cents per gallon, and machine made barrels from 37 to 37½ cents per gallon.

RETAILER'S VIEW OF CATALOGUE AND DEPARTMENT HOUSES.

We have read with interest several articles from time to time on "Catalogue and Department Stores," but so far we fail to find any one that, from our view of the subject, quite covers the ground. That the catalogue and department store has come to stay no one doubts, and that the jobber and retail merchant has to meet them on every hand is clearly demonstrated. Just what plan to adopt that will be best for all is a broad question, but after considering the question from a retailer's standpoint we have concluded that the main trouble grows out of prices more than anything else.

Goods Bought by Department and Catalogue Houses at Jobbers' Prices.

In order to obtain goods to the best advantage the department store or catalogue house buy from manufacturers, as far as possible, in such quantities as will enable them to beat jobbers' prices. This gives the jobber little chance to sell such stores, except on such lines as are controlled by the jobber or the jobbers' association, thereby placing the department store or catalogue house on equal footing with the jobber, so that they can sell their goods to the public at about the prices the jobbers sell direct to the trade, thus cutting the small retail Hardware merchants' profit so close that they cannot compete.

Retailers Must Buy on Same Terms.

We believe this is the main difficulty, as our experience has been that the consumer is willing to buy from the home merchant as a rule, provided he can sell at same price. the catalogue house being used more as a guide than to order from; but in order to do this the retail merchant must buy from first hands and at same price as the jobber or catalogue house. Where we can buy direct at jobbers' prices we have no difficulty in meeting the catalogue house and selling at a fair profit.

Will Manufacturers Protect the Retailer or the Jobber?

In our large cities the retail merchant has to compete with the department store. In small towns and country places the competition is with catalogue houses. As we see it, the fight is between the manufacturers and jobbers as to whether the manufacturer will try to hold up the jobber to the detriment of the retail merchant, or sell the retail merchant direct at the same prices given catalogue houses, thus affording him the same opportunity to compete in price.

How a Small Jobber Handicaps the Retailer.

. The retail merchant also finds himself very much handicapped by the small jobbers not only in the Hardware line, but many others, from the fact that they call on planing mill men, blacksmiths, contractors and, in many cases, farmers, quoting them low prices.

How Retailers Get On Jobbers' Lists.

The result is the home merchant is cut out of what rightfully belongs to him, and in many places the best and largest retail merchants have been forced into the jobbing business to some extent, in order to get on the jobbers' lists, when they are nothing more than large retail stores and should be treated as such. At the present rate of increase along this line it will not be long before exclusive retail Hardware stores will be a thing of the past, as it will not pay to continue the Hardware business unless the retailer can get on jobbers' lists, or get on same basis as department stores and catalogue houses. If the jobbers' association are going to hold on and stand between the manufacturer and retail merchant it will be necessary for retailers to take steps along this line, so as to become jobbers and be placed on the jobbers' lists.

Combinations.

It is very apparent to the retail merchant that it will not be long before it will be impossible for the small dealer to make anything on staple goods, for we have yet to find where combination prices have been of any benefit to merchants in general, other than manufacturers and jobbers receiving large rebates. The forming of these great combinations, we believe, is more disastrous to the retail Hardware trade than the catalogue and department stores. Here we believe is the chance for the jobbers and jobbers' association to show their hand, and to help checkmate the combinations by refusing to buy from them, buying only from independent factories or starting factories themselves on such lines as cannot be bought of independent factories.

A Suggestion and an Alternative.

It is impossible for the retailers to meet them, but perhaps the jobbers' association can exert an influence strong enough to control the market on any line in the Hardware business if they so desire, and thus secure favor with the retail merchant. Without such steps taken by the jobbers the retail merchant has no option but to buy direct from the independent manufacturers on all lines as far as possible.

RETAILER.

HOPKINS & ALLEN ARMS COMPANY.

A FTER their plant was destroyed by fire about a year ago Hopkins & Allen Arms Company, Norwich, Conn., bought the business of the Forehand Arms Company of Worcester, Mass. They dismantled the Forehand factory of machinery and fixtures and placed them in a modern building which has been erected at Norwich. Here they are continuing the manufacture of the Forehand line of Single and Double Shotguns and Revolvers, and by the first of the coming month expect to have new goods of their own on the market. Their line will be extensive and varied, including Double and Single Shotguns, Rifles and Revolvers.

The retail Hardware and Harness store of Sohn & Helena, Mountain View, O. T., was recently destroyed by fire.

WHAT TO DO IN SEPTEMBER.

BY H C. W.

T is the month that brings to mind "When the corn is in the ear," and the fact that another harvest is at hand; a harvest that but a few years since made but little difference to the average Hardware merchant, as a matter of preparation, but that now requires nearly, if not quite, the attention given to the wheat crop.

All other harvests are well over, barring the cutting of clover and threshing of it, and still much of the wheat.

The Corn Gathering

has opened up a cleaning for nearly, if not quite all, the Binder Twine carried over from summer wheat and oats. The growth in the use of Twine has been of such proportions that in many sections as much is used for this purpose as for wheat, and the misery of storing and losing the profit on Twine carried and the use of the money for a year is well done away with in this manner of disposal of it.

Right here is a good suggestion that may serve those who carry some from both seasons. We find a demand for it, and find it profitable to display it in a large basket at the front door the entire year through. It sells for large package, express and all sorts of purposes, and quite a good many bales are gotten rid of through the year.

Necessaries for Corn Crop

seem to increase each year. There is the Tarred Sisal, and tons of it are sold where it used to be but bundles. It is a good idea to buy at least half the stock in half or 50-pound bales; for one reason, many wanting a number of lengths, and otherwise wanting them cut, will buy the small bale entire and do their own cutting, much to your advantage in time and labor. Again, the half bales are convenient for jobbing in a small way.

It is a good plan to keep a bale or two at the door, in season, with ends drawn out for show, and a couple near the scales to sell from. A 2-foot piece off an 8 x 8 timber makes a splendid block for cutting. A good way to show Corn Knives and as good a one for keeping them nice and bright is to fill a half bushel measure with timothy seed, in which they are stood upright. We find this, simple as it is, very much better than any rack.

The Seed Crop to Follow

or that is really at hand with the coming of the month should have proper attention, since we take it most of the Hardware trade are buyers and sellers of timothy, clover, red top, blue grass, &c. Bins for grading and mixing should be brought to light and put in shape. Old and second-hand bags patched, stitched up and gotten ready for service. A new stock of bags should be at hand for those who are buyers and shippers. The trade for fall lawn seed, while not as large as the spring, is yet of much importance and should be gotten ready for.

Our experience is that blue grass, red top and timothy make an excellent stand, and during both seasons thousands of packages, weighing perhaps 1½ pounds and selling at 20 cents, are disposed of. No goods in the house bring as nice a profit and with as little trouble. At some time in the month we have a good boy make up the mixture in a large box or bin, filling and tying nicely the packages ready for sale. A sign at the door, "New Lawn Seed," and a line local in daily papers, does the rest.

For Storing Away Season Goods

of the early summer, the later days of the month can be well employed. All of us are bound to carry more or less of this class of goods, and they need enough attention to the putting away that they may come forth again in the spring in condition to sell. Some lines—like Ice Cream Freezers—now sell to a certain extent all the year through, and of these classes samples at least should be left on the selling floor. Hammocks should each be wrapped separately in paper—as they came to us—and placed in good, dry quarters to prevent mildew or rotting of the thread.

The tops of all Refrigerators should have a large sheet of express paper tied over them, and all Freezers should be treated the same way, the latter to keep out the dust and filth. These things take a little time, but I'm sure are worth it all in the results.

September a Building Month.

Not only finishing up the many new buildings begun early in the season, but the beginning and putting up of new ones at this date. They are put through more rapidly than if started in the earlier months and contractors claim fall settling and fall work is the best.

There is the Plate, the Art and Sheet Glass for those that had an early start, to be furnished. The trimmings and finishings of each and every kind, the Mantels and Grates, if that be a part of the business, the Oils, Fillers and Varnishes, the Colors for the outside trim, and take it altogether, the month can bring to us as busy a time as any other in the year.

A Month to Buy Holiday Goods.

After the discussions of a year ago as to the carrying of these lines and their profits, it is to be supposed there will be many additions to what are properly holiday stocks.

There are Chafing Dishes and all their accessories, and they are beautiful lines to carry. Your stock of Carving Pairs and Sets. Your Table Knives and Plated Ware, Pocket Cutlery and Scissors and Shears stock, Nut Picks and Nut Cracks, Manicure and Toilet Sets, Tool Boxes and Drawing Sets and all the thousand and one articles belonging to such a stock. The opportunity for some may offer earlier and for others later, but the bulk of real holiday goods will offer in September. It is well to buy when they do offer, with the privilege of having them come in early, than later and have them too late to serve you, as is often the case.

Advertising for Fall Work

should be a regular campaign and noticeable changes be made in your work. People expect bright, clever ads. for the classes of goods that are not all staple. It is well at any rate to change method and manner as often as possible when not at the expense of the goods themselves. Cuts are of much value in fall and holiday work, and can now be secured at such reasonable rates of *The Iron Age* publishers and elsewhere that there is no reason in the world why any of us should be without them. People will often notice and buy from a cut when simple wording would in no wise attract them.

A good plan, too, and one well worth the trying, is to do as is sometimes done with a show window—advertise one thing at a time. If it be Carving Knives, then Carving Knives only for all they are worth, and if Stove Polish, your particular kind of Stove Polish as if no other

The month is a good one for any purpose, and there need be none of it lost. It is not likely there will be, in the hands of pushing, up to date Hardwaremen.

HARDWARE STORE BUSINESS METHODS.*

A NEW and enlarged edition of "Hardware Store Business Methods" has just been received from the press. The book contains 227 pages, substantially bound in cloth. It retains all of the features which made the former edition so popular, and has in addition a very interesting and instructive chapter on "Keeping Track of Shop Work."

The scope of the work is broad, treating, among other subjects, those of buying and selling, stock taking, care of price-lists and catalogues, treatment of clerks, collections, methods of changing credit into cash business, record of stock, cost marks, &c.

The additional pages on keeping track of shop work are of importance, describing, as they do, jobs of repairing Bicycles and plumbing and tin work jobs, from the taking of the orders to the completion of the work. Illustrations are given of the various slips and cards used in approved systems, the orders being followed from the time they are recorded until a permanent record is filed for future reference.

All of the methods described in the book are practical ones and in use by enterprising business men.

Letters from the Trade.

Our readers are invited to discuss in these columns questions of trade interest connected with the manufacture or sale of Hardware We shall be pleased to have a free expression of opinion on subjects deserving the attention of Hardware merchants and manufacturers.

Cumbersome Prices.

A correspondent enters a protest against the manner of pricing Heavy Strap and T Hinges. The method of quoting these goods has been un changed for a long time, and no doubt has been a source of annoyance to many Hardware retailers. The merchant writes as follows:

May we register a complaint against what looks to be a cumbersome and burdensome manner of pricing Wrought Iron Heavy Strap and T Hinges, the said manner or method not seeming to be necessary. To particularize: 6-inch Heavy Strap are listed 29 cents per pound and discount is 75-10-10-10 per cent.; to find net cost the weight must be known, the 29 cents must be multiplied by the weight, four subtractions must be made (and also three multiplications) to find the percentage of list cost, and finally the product of the weight and list price per pound must be multiplied by the percentage of list cost.

The retailer must know the list and the weight per pair, and then, with the discount to aid, make nine calculations, and if he has been careful and lucky, he has the price of a pair of 6-inch Heavy Strap.

We vigorously object to such pricing.

How to Get On the Jobbers' List.

The following communication is an illustration of the general desire on the part of enterprising houses in the trade to get recognition as jobbers, and especially to have their names placed in the classified lists among the houses who are entitled to jobbers' prices. Our correspondent's inquiry is as follows:

I am a jobber and cannot get jobbers' prices, because I am not on the jobbers' list.

Will you tell me how I can get my name on that

THE CHAPIN-STEPHENS COMPANY,

THE H. CHAPIN'S SON COMPANY, Pine Meadow, Conn., and Stephens & Co., Riverton, Conn., have joined forces, and the Riverton plant will be moved to Pine Meadow at once and established in the buildings of the Chapin Company. The two oldest Rule manufacturing concerns in the United States are thus brought together, making a very strong company with large cannecity.

H. Chapin, the grandfather of the present members of the firm of that name, established the factory at Pine Meadow in 1826, when he began manufacturing a full line of Carpenters' Planes. This branch of the business is now being carried on on an extensive scale by the present company. A few years later Mr. Chapin added the manufacturing of Plumbs and Levels and some other minor lines, which are now made by the present company. In 1835 he began the manufacturing of Folding Carpenters' Rules. E. M. Chapin, who died in December, 1896, was closely identified with the business as his father's employee until the early 60's, when he became sole owner of the company, carrying on the same with success until the time of his death. E. M. Chapin's sons, H. M. and F. M. Chapin, during their early school days were closely identified with the business during vacation time, and since 1885 H. M. Chapin has been identified with the business, and in the year 1889 F. M. Chapin also became connected with it.

In the year 1853 L. C. Stephens and his son, D. H. Stephens, started up at Pine Meadow manufacturing Rules under the firm name of L. C. Stephens & Co., where they did a successful business. They moved to New Hartford in 1859, and in 1861 adopted the style of Stephens & Co., which has been used ever since. They remained in New Hartford until 1864, when they moved further up the Farmington River and located at River-

^{*} David Williams Company, 23?-238 William Steet, New York. \$1.00, prepaid.

ton, where they have since been located. F. L. Stephens, son of D. H. Stephens, worked with his father and became familiar with the business. In 1876 he became permanently connected with the company and he has since been successfully identified with them.

This consolidation of interests will be known as the Chapin-Stephens Company after October 1 next. The personnel of the new company will doubtless be somewhat different from that of the present Chapin company. It is very probable that R. E. Holmes will continue to be president; H. M. Chapin, vice-president, and F. M. Chapin, treasurer, with F. L. Stephens as secretary. The present Board of Directors will probably be increased somewhat. The Chapin-Stephens Company will open a store at 80 Chambers street, New York, under the management of V. P. Humason, who is identified with the new company, and who has represented Stephens & Co. for the last 25 years.

IDEAL MFG. COMPANY.

THE IDEAL MFG. COMPANY, New Haven, Conn., announce that they have made arrangements with the Phil. B. Bekeart Company, 114 Second street, San Francisco, Cal., to act as their authorized agents for the Pacific Coast on and after September 1 next. The Phil. B. Bekeart Company will carry a full and complete line of Ideal goods, and will be in a position to fill all orders promptly. The Pacific Coast headquarters for these g. 4s for the past 12 years has been in charge of the Colt's Patent Fire Arms Mfg. Company's agency, but this company have discontinued carrying stock in San Francisco and are no longer agents.

PRICE-LISTS, CIRCULARS, &c.

Joseph Dixon Crucible Company, Jersey City, N. J.: Graphite for Automobiles. A pamphlet devoted to the use of Graphite on steam, gas and electric automobiles relates the experiences of a number of persons who have used it for this purpose.

M. W. Robinson Company, 79 Chambers street, New York: Mechanics' Tools and Specialties. The company are owners of the Davis Level & Tool Company, and illustrate in catalogue No. 3 a line of Carpenters' and Machinists' Adjustable Iron Plumbs, Levels, and Inclinometers, Davis patent, together with other Tools and Specialties.

OHIO TOOL COMPANY, Columbus, Ohio, and Auburn, N. Y.: 1901 catalogue, devoted to Planes, Plane Irons, Chisels, Auger Bits, Drawing Knives, Gouges, Bench and Hand Screws, Handles, Coopers' Wood and Edge Tools.

Washington Tool Company, Owatonna, Minn.: Illustrated catalogue of specialties manufactured by the company, comprising the Larson Pincers, which have long been the special product of the company, and new lines of goods now brought out including the Clinger Metal Bucket Pump Plunger, the Kaplan three and four horse Evener, the Kaplan Pole Saw, the Kaplan Barrel and Box Cart, and the Dewey Grubber.

Sundries Mfg. Company, South Bend, Ind.: Illustrated folder of Spring Curry Combs, both with and without back.

Syracuse Wire Works, Syracuse, N. Y.: Special catalogue 17, illustrating Metal Work, such as Bank and Office Railings in Brass and Iron, in almost any finish, for public and office buildings. A specialty is also made of designs from architects' drawings in keeping with the woods or stone used in fitting up an office. A general line of Wire and Iron Work is also manufactured.

FITCHBURG FILE WORKS, Fitchburg, Mass., manufacturers of Files and Rasps, Back, Band and Butcher Saws: Illustrated leaflets describing the above mentioned goods.

CENTRAL HARDWARE COMPANY, Philadelphia, Pa.: Illustrated catalogue of Builders' Hardware, such as Catches, Cupboard Turns, Sash Lifts and Fasteners, Bolts, Drawer Pulls, Handles, Hooks, Saws, Scrapers, Frame Pulleys, &c.

THE MILTON MFG. COMPANY, Milton, Pa.: Illustrated

catalogue of Cold Punched Nuts, Chamfered and Plain, Semifinished and Finished, Case Hardened Hexagon Nuts, Hot Pressed Square and Hexagon Nuts, Washers, Bar Iron, Forgings, &c.

REED MFG. COMPANY, Erie, Pa.: Illustrated catalogue D, of Malleable Iron Pipe Stocks, Dies, Machinists' Sectional and Combination Vises, Taps and Reamers, Pipe Cutters, Emery Wheel Dressers, Tap and Pipe Wrenches, Beam Clamps, Pipe Hangers, Oil Cups, &c.

ELECTRIC WHEEL COMPANY, Quincy, Ill.: Illustrated catalogue of Broad Tired Wagon Wheels for farm use; also Wheels for implements, carts, wheelbarrows, and all kinds of conveyances that go on Wheels, together with various styles of Wagons for farm and similar work. One of the pages of the catalogue contains an illustration of the new and well equipped plant of the company.

THE UTILITY MFG. COMPANY, 16 South Frederick street, Baltimore, Md.: Illustrated folder of Rotary Sifters, Wire Strainers, Easels, Horns and Specialties.

REQUESTS FOR CATALOGUES, &c.

The trade are given an opportunity in this column to request from manufacturers price-lists, catalogues, quotations, &c., relating to general lines of goods.

Houston Hardware Company have succeeded H. H. Holtkamp, at Houston, Texas, and will do a wholesale and retail business in Hardware, Stoves, Tinware, Wooden Ware and Sporting and House Furnishing Goods. The company would be pleased to receive catalogues, &c., relating to the above lines.

Roanoke Hardware Company, Roanoke, Va., who carry a general line of Hardware, request copies of price-lists, &c., from manufacturers.

Oakman Bros. Company, 123 Chambers street, New York, are about to start in the jobbing Hardware business at the above address, and would be glad to receive catalogues, quotations, &c., from manufacturers.

Morton Hardware Company, wholesale and retail dealers in Hardware and Builders' Supplies, Bessemer, Ala., are desirous of receiving catalogues and pricelists from manufacturers in their line.

Broadway Bicycle & Sundry Mfg. Company, 7 and 9 Warren street, New York, intend to add a jobbing department, comprising Builders' Hardware, Shelf Goods, Kitchen Utensils, &c., which will be conducted in conjunction with their Bicycle Sundry business under the same firm name. They would be pleased to receive manufacturers' catalogues, discount sheets, &c.

Compania Pan-Americana de Novedades (Pan-American Novelty Company), 606 Montgomery street, San Francisco, Cal., who make a specialty of export mail orders to Mexico, Central and South America and the Philippines, alvise us that they would be glad to receive catalogues and other printed matter from manufacturers of Hardware Novelties suitable for export mail orders.

Dorgan-Goodbrad Hardware Company, Mobile, Ala., have lately organized to carry on a large retail and small jobbing business. They have rented all of a three-story building at 71 Dauphin street, which is being remodeled for their purpose, with new front plate glass windows and attractive sample rooms. The officers of the new company are N. R. Clark, president; L. C. Dorgan, vicepresident, and T. O. Goodbrad, secretary and treasurer. Mr. Dorgan has for some time past been in the retail department of the Simmons Hardware Company of St. Louis, and formerly traveled for the Barney-Cavanagh Hardware Company of Mobile. Mr. Goodbrad has also been identified with the Barney-Cavanagh Hardware Company. The new company are starting in business under what are regarded as very favorable auspices and expect to be in shape about September 15.

SHOW WINDOW DISPLAY.

The trade are invited to contribute information in regard to methods which have proved satisfactory, with descriptions of attractive displays. Inquiries also are solicited, to which careful attention will be given,

HARDWARE STORE WINDOW DISPLAY.

BY L. J. A. SURVEYER.

PART I.

One of the great secrets of success in a retail Hardware business is the attractive displaying of goods to be sold. An artistically arranged window has been the foundation of many a man's success. A good window display will invariably attract the attention of passers by. A love for the beautiful, novel, elegant and lovely is always appreciated by the public. After admiration follows the desire of possession. Time spent in the thoughtful consideration of how best to arrange a shop window so as to make it attractive is time and labor never wasted.

For some reason Hardware merchants do not seem to devote as much attention to their show windows as the dry goods dealers and clothiers. No business possesses in itself greater facilities and a greater variety of materials for a fine and attractive display than does the Hardware business. The window is, as it were, a vestibule to the customers.

Rated by His Window.

The Hardware merchant who wants to make his store well known will find no better help than a correctly dressed window. In his window are seen his taste, thrift, cleanliness and business methods, and he is rated accordingly. No matter where the proprietor may be, his window is always there, exposed to the public gaze, and continually inviting the public to the store. When competition is keen a dealer has to try different ways to gain trade. In time gone by the customer would seek the retailer, but to-day it is the opposite and the dealer must look for the purchaser. Hence the advantage of having seasonable and well cared for show windows, which will serve as a continual reminder that goods are up to date and the proprietor is progressive.

An Attractive Window is Not Costly.

A Hardware window can be made attractive in many ways. One of the main points is cleanliness. An attractive, artistic window does not cost any more for rent or taxes than the repulsive, ugly show of a dusty pile of goods. A display, however simple, should be true and have the merits of neatness and taste. The badly kept window draws no attention to the store. It is the one with the novel, striking ideas and catchy display which takes the public eye and never fails to increase trade.

Some Hardware merchants believe that to have an attractive window is a costly and difficult thing. There is nothing hard about it. He who thinks so should begin by making a small display of a certain line of goods on the counter, and if satisfied, should place it in his window, and he will soon learn that, to use an old proverb, "There is nothing like trying," and that "Thoughts beget thoughts."

Window Decorations Always Pay.

Hardware merchants are now admitting the fact that window dressing is most important to the retailer as an advertising agent. There are still some who do not cultivate it. There are some stores in the city and some in suburban towns where no attention is paid to shop windows. The dusty and smoky plate glass remains uncleaned and fly specked for months and even years. The result is that trade is stagnant, and the store gets no new customers, clerks get discharged one by one, and finally the placard "Store and Fixtures for Sale" is hung up. In the writer's 14 years' experience in the retail Hardware business he has met with no case in which window dressing did not pay according to the attention devoted to it. This testimony is believed to be universal among progressive business men. To the ambitious retail Hard-

ware clerk there is no better passport to success and advancement to be found than to be an artistic window dresser. There are numbers of clerks who are able to do something in that way. Any one capable of selling goods behind the counter can become an expert window dresser if he gives a little time and thought to it.

Increased Sales Easily Traced to Exhibits.

When the writer engaged with the present firm some 12 years ago no attention whatever had been paid to the show window. The bottom was flat, covered with an old piece of carpet, and with no decoration in the sides or back of the window. A few articles were thrown in now and again, and the window must have gone for months and months without being changed or the plate glass cleaned. People were never seen looking in because there was nothing there to draw attention and hardly anything worthy to look at. After having given the object in view a few thoughts the writer went to work, and if the verdict and congratulations of a great many persons may be used, the window may be called a success. No matter at what hour of the day, or specially in the evening, people are seen looking in the window.

Never has much time or money been spent to make it look attractive. Judgment and ideas were used; old boards, empty cases, are what the platforms are made of. They were then covered with cambric. A point was made to have glass kept scrupulously clean, and all goods displayed polished or dusted with a cloth. Since then business has increased. Stock was augmented as well as the staff. Almost every day customers would come in and ask for goods "same as in the window." It has been noticed that persons asking for some line of goods kept in stock with which the clerk was not familiar would be told, "We have not got them." The customer would answer, "But I saw them in your window."

An ill dressed window shows lack of enterprise and poor business methods, and it is an eyesore to the place where it is located. A little attention given to the window each week has proved to be a good investment.

The Relation to Local Advertising.

A newspaper advertisement merely indicates that one has Hardware of a certain kind for sale. A good window display does not only do the same, but at the same time and at far less cost stimulates curiosity and creates a desire to possess the article displayed. There are many persons who, when they intend to purchase a certain class of Hardware, invariably seek the window where the goods are well arranged. A few hours of a clerk's time each week is all that is required to do effective advertising by window dressing. The cost is economical.

It is desirable to show the same kind of goods in the window as are at the time advertised in the newspaper. To the large advertiser his window should be a supplement to the local paper, over which it has the advantage of presenting at once the object the purchaser might happen to need. If well displayed in the window the customer follows out his intention to purchase, and the sale is made. There are many people who do not take or have time to read a newspaper advertisement, who, while passing a store, would stop and look at the window, if it is attractive. Attention paid to the store window is one of the best advertisements. Many merchants in various lines of business are unanimous in one sentiment, and that is, a show window well dressed is the store keeper's card to the passer by.

Should One or Several Lines be Displayed?

The writer believes in having more than one article shown at a time. Let the seasonable goods occupy the best place in the window, but this does not prevent the showing of other lines as well without spoiling the effect of the seasonable or special display. On the contrary, it seems to help the special goods to sell faster. One reason for believing this is that two years ago a sale was made to out of town people on account of the show window. They came to this city to purchase all that was required for a country villa they had decided to build. They entered the store and the first words uttered were, "You have a general display of goods in your window. We have been walking around town, but

nobody seems to have such an assortment as you display in your window. I hope that we will find everything that we want here!" They did.

A sale of over \$500 was made, and they have been regular customers for smaller purchases ever since. Another reason for believing in general display is that it is more attractive and interesting to the masses. If a window should be quite small it would be preferable to display but one specialty or a few lines of goods, making the display according to the size of the window.

Marking Prices on Goods.

Marking prices on goods depends very much upon the locality and the class of trade the Hardware merchant has to deal with. If the store be located in a wealthy thoroughfare, goods ticketed in window would not be so important as if the store were situated among the working class. The writer believes in putting prices only on seasonable goods and other articles the merchant wants to push. Too many price tickets in a window takes away the effect of the special goods ticketed. Experience has taught that no more than six or seven prices of goods should be given in a miscellaneous Hardware show window. Most people, especially women, believe that when a few articles only are ticketed they are cheap and bargains. If the display were of only two or three kinds of goods it would be advisable to have prices marked,

Utilizing an Employee's Skill-

In choosing an employee to take charge of show windows, let it be suggested that the one to be selected give evidence of possessing judgment, taste and a trained eye for quick comprehension of how to arrange, distribute and shape a variety of articles so as to present a pleasing exhibition. Before a clerk begins to dress his window he should plan out what he is going to do and have at least three principal objects in view:

- 1. To display goods kept in store.
- 2. To draw the attention of the people to the store.
- To make the exhibit such that it will excite in the people the desire of possession.

If a window is arranged correctly it is a silent and continuous salesman, and sooner or later purchases are made. Goods bought are spoken of to acquaintances, and goods seen in the windows are remembered long after they have been taken out. A clerk with an ordinary amount of intelligence and some ambition, who is not afraid of work and who will take a little pains, will gradually learn to make a good display and become a source of revenue to his employer. The writer has often noticed while dressing his own windows how quickly thoughts would come to his mind and thus enable him to make a finer display than he had planned.

In the Hardware business there is gradually opening a wider field for window dressers. In some lines of trade here in Canada they employ persons who make a profession of window dressing. One large department store has a young man who gets \$2000 a year for dressing the windows. If other lines of business can afford to spend so much money for the care of their windows they must have found it a paying investment. Why should it not be the same with the Hardware show window?

(To be continued.)

HERE AND THERE.

The following opinion coming from a large Illinois house is of special value as showing the result of extensive experience in window and other advertising:

We think there is no advertising quite so good as window display, and we judge from experience. About six or eight times a year we devise something that will attract attention by its novelty. For instance, we had at different times a horse and sleigh, a bicycle, a turkey, &c., made up of articles in a Hardware stock. This gets the people into the habit of looking into the window every time they go by to see what is new there. It makes people talk about you, which is good advertising.

We have had people come in from the suburban towns for miles to see these novelties; and when they sometimes come too late they make the remark that

they came almost on purpose to see the window they had heard so much about. We find when we have this kind of a window that the special piece is all that they

When we want to sell some special article we make a special display of it. For instance, we will fill a window with Cobbler's Sets, or Wooden Ware (this can be assorted), or Cutlery, or Granite Ware, &c. Put in one thing at a time and price it. Do not forget this. We can see a very large difference in our sales of the articles shown at once. Our experience with windows with a little of everything and not much of anything in is that they are of little value. We never leave a display in over a week and it is a good plan to call attention to the window display in the newspaper advertisement. One helps the other. Window advertising shows more direct results than any kind of advertising we have ever tried.

A well-known Pennsylvania merchant, whose newspaper advertisements and show windows have been the subject of much favorable comment, thus describes one of his successful displays:

Last fall we had a very handsome display of Guns and Gunning Material. As we are in a wooded country, I had some of the boys go down to the woods and cut three small hemlocks about 8 feet high. Then we covered the floor of the window with hemlock boughs and had a small tent. Three stacks of Guns were placed between the small hemlocks. From the latter were hung Leggings, Coats, Hats, &c. Of course, we had the window well lighted.

A prominent Connecticut house describe a somewhat unusual way of selling Meat Choppers that is worthy of consideration:

An attractive display which we have made is a window filled with food choppers. In this window we place a small table measuring about 2 x 3 feet, covered with a white table cloth, and at the edge we screw on a dozen or more food choppers with a plate in front of each. We then put different vegetables, meats, &c., into the hoppers of the food Choppers and a small pile of the same food ground up on a plate in front. These things have to be changed almost daily in order that they may appear fresh. We then fill the bottom of the window with the food Choppers and put prices on them. A window like this is sure to sell a good many choppers.

* * *
An exchange gives the following good advice for the window dresser:

Don't begin operations in your window without first forming in your mind, or, better still, with pencil and paper, the point which you wish to make or the plan and design which you wish to construct.

. . .

A New Jersey merchant says:

We try in making displays always to have a difference, even if only of arrangement, and have from time to time accumulated various fixtures for display purposes, and are adding to them all the time. Clean cloth of various bright and attractive colors is always an aid to the appearance of a display, and we make it a rule as soon as any of our cloth gets dirty to use it for dusters, wiping rags, &c. We also try in the course of a year to show up every article in the store, and find also that any old stuff can be readily disposed of if put in a window and marked with a low enough price to make it really a bargain.

TRADE ITEMS.

KIRK-LATTY MFG. COMPANY, Cleveland, Ohio, have materially increased their facilities for manufacturing Stove, Tire and Carriage Bolts, Stove Rods, Machine Screws, Rivets, Tacks, Cold Pressed Nuts and Special Bolts, Screws, Rivets, Nuts, Tacks, &c. They have also awarded a contract for the erection of another story to a

portion of their factory, which will give them an addition of one floor 275 x 50 feet. They have also materially increased the size of their office and will soon be in condition to care for a largely increased volume of business. They have just issued a fine new catalogue, embracing the lines mentioned above, which will be cheerfully sent on request.

THE DANVILLE BESSEMER COMPANY, Danville, Pa., began operations in their new Shovel department this week. The Handle department has been running for about a month and the actual production of Shovels has now begun. The output of this plant when running to the full capacity will be from 200 to 250 dozen per day.

THE BONNEY VISE & TOOL WORKS, 3015 Chestnut street, Philadelphia, Pa., announce that they have taken over the Thomas J. Andress Glass Cutter factory of that city, and will continue the manufacture of Glass Cutters and Combination Tools.

OFFICE RULES OF A NEW YORK HOUSE

Conspicuous on one of the walls of the store of Neal & Brinker, wholesale and retail dealers in Hardware, Cutlery, &c., and Eastern and export agents for a number of well-known manufacturers, 18 Warren street,

Office Rules: Time Allowed for Interruption During Business Hours. Life Insurance Agents Peddlers and Begging Agents..... Friends with a Soft Snap. Friends with Wheels in their Heads. Friends who will talk Baseball.... Friends who want us to go Fishing . . 2 Friends who want us to go to Lunch. Friends who want to Borrow \$5 Friends who want to Borrow \$10 ... Friends who want to Borrow over \$10 Friends who want to give Orders ... No Limit Male Bores Female Bores Politemen, All Night Customers in General Customers who want to buy Hardware 12 NEAL & BRINKER. Hardware, 18 WARREN ST., NEW YORK.

New York, are the office rules which are set forth in the illustration given herewith. They also appear on the back of their business card. While the rules are of a facetious character, it will be observed that they emphasize the necessity of giving strict attention to business. It will be noticed that a good deal of time is allowed for customers, while "friends" and other interruptions are given insignificant attention.

P. & F. CORBIN.

CHARLES M. JARVIS, formerly president of the Berlin Iron Bridge Company and later vice-president of the American Bridge Company, has been elected vice-president of P. & F. Corbin, New Britain, Conn. He will succeed Andrew Corbin, the late vice-president of the company, a position which Mr. Corbin has filled for a long time. Both Philip and Andrew Corbin feel that they are entitled to more relaxation from business than they have taken for many years, and Mr. Jarvis will relieve them of a large part of their care and responsibility, though the Messrs. Corbin are not to separate themselves in any way from the business. Mr. Jarvis will assume the responsibilities of his position in a few weeks.

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NOTES ON FOREIGN TRADE.

BRITISH LETTER.

Offices of The Iron Age, Hastings House, Norfolk Street, London, W. C.

Rat Traps.

T appears that rats in Denmark are too plentiful for comfort. Recently an exhibition of rat and vermin traps was held at Copenhagen. The committee promoting this rather unusual exhibition undertook to receive through an agent Rat Traps of all kinds, and to exhibit them in the makers' or exhibitors' own names. There was nothing to pay except freight or postage of the goods to Copenhagen, the customs duties, cost of the erection and cost of returning the goods were defrayed by the committee. Further, the committee promised to pay the exhibitor the wholesale price for all the Traps sold and to endeavor to sell all the Traps exhibited and thus to open business relations between the exhibitors and the retailers in Scandinavia. The exhibition was opened a week ago, and there is a representative collection of American and Continental patterns. Twenty-nine British firms were approached, but only two of them accepted the invitation, in spite of the favorable terms offered. The next Hardware traveler who goes to Scandinavia should apparently be well supplied with samples of Rat and Vermin Traps. At least so I assume, for the promoters would hardly arrange for such an exhibition without good cause.

The Sheffield Trades and Overtime.

The new factory and workshop act severely restricts overtime in all the workshops affected. The Sheffield silver plating trades will apparently be affected to some extent, because trade is always at full pressure just before Christmas. I do not know if output will be restricted in consequence, but if it is, perhaps there are some American manufacturers of E. P. goods ready to supply the deficiency.

A New Source for Rubber.

Cycle manufacturers will watch with considerable interest an experiment made by the Government in Burmah and the Straits Settlements in the cultivation of the Levea rubber tree. An expenditure of \$75,000 has been sanctioned, and the site for the plantation will be chosen in the next month or two. Hitherto the experiments with other late bearing creepers in the same region have not been fruitful of much, and a plantation of Ficus elastica to the north of Upper Burmah has been abandoned. It is stated, however, that another plantation still nearer to the Chinese frontier gives promise of success, especially as there is a large trade in Yunan rubber brought over the frontier and sold to the traders in the Bhamo bazar.

American Competition in Cycles.

Mention of Cycles reminds me of an interesting law case concerning the promotion of an English Cycle firm, in which evidence was given showing the influence of American automatic machinery and American competition upon the English trade. I quote the following from the evidence of the managing director:

He had found while managing director of the Cycle Components Company that there was a check to the Cycle trade, foreign business declining almost to vanishing point. He traveled in 1895 on the Continent for the purpose of discovering the causes in the falling off of the trade, and also for the purpose of trying to get into the manufactories and see what means of production they had. He visited several engineering, electrical and Cycle works, and for the first time he saw automatic machinery being used which he had not seen in this country. When he commenced business for himself at Sherlock street, in 1896, the first thing he did was to buy automatic machines, which could be used for a variety of engineering work. He spent £26,000 in plant, £2000 only of this being invested in machinery-exclusively for Cycle works, which could not be used for other purposes without alteration. In 1897 the inner circle of the Cycle trade were seriously affected by American compe-

tition, and English manufacturers were forced to reduce their prices. The American competition became keener in 1897, and attained the nature of a panic in April and May, 1898, the time of the Hooley bankruptey.

It is characteristic of English methods that all the time the air was full of statements that American competition was severely felt the English makers were all affirming that they could easily hold their own, yet four years afterward the truth comes out and is accepted without demur.

International Patent Law.

Judging by a question recently put in Parliament, it would seem that British patentees, if they take out a patent in Germany, are compelled to manufacture their goods in Germany, or stand in danger of losing their patent rights. Of course a German who takes out his patent in the United Kingdom can manufacture his goods in Germany and send them over here duty free. The subject is being investigated by the Board of Trade (which, by the way over here is a Government department), and the whole question of international patent rights is to have full consideration. It is well known that some American manufacturers find it cheaper to establish manufactories for their patents in this country.

New Methods of Lighting.

It is interesting to observe that the municipal and other authorities are still experimenting upon various forms of lighting for streets and vehicles. The "Phos' Acetylene Company have received a contract for lighting the London 'buses with Acetylene Lamps. These Lamps are patented by this syndicate, and are proving very serviceable, not only for 'buses but also for street lighting. Contracts have also been secured in various mining centers, while the same company are sending out workmen to Venezuela and Brazil to start the system over there, contracts having already been secured. Another scheme of lighting is that known as the "Kitson System," which was brought out in 1896 in the United States, and has now spread to the Continent, to Japan and China. The beauty of this or any similar system is that it is not necessary to obtain Parliamentary powers, such as are necessary for gas and electric lighting, as no mains or cables need be laid, nor need the roads be torn up. Judging by the amount of business that has been secured by both of these firms in this country during the past two years, it would seem that there is money in it.

Customs Tariffs in South Africa.

Business men in South Africa, paying no heed to the old motto about counting one's chickens before they are hatched, are already discussing what should be the tariff arrangements under British administration after the war. It is notorious that there is an old feud be-tween Natal and Cape Colony, and now that the Transvaal and the Orange River Colony are expected to enter into the comity of South Africa, those concerned are using their influence to work the tariff according to their several interests. There seems to be, however, a growing feeling in favor of a general reduction of import tariffs all round. The protection of the farming interests, it was argued, has not resulted in strengthening the position of the farmers in South Africa, so that it is likely enough to happen that the tax upon imported farming produce will be materially reduced. If this should be the case, it naturally follows that South African farmers will require to purchase more largely Agricultural Implements to reduce the cost of their produce to meet competition. general idea is to reduce the cost of living throughout South Africa, while a South African Customs Union is almost certain. . The disposition is to adopt, as far as possible, a tariff approximating to free trade, or to adopt the Australian policy of tariff for revenue purposes only. If any such policy be accepted, it should certainly stimulate trade with other countries. Of course, these remarks do not affect the sale of Agricultural Implements in South Africa, because these goods already are admitted free.

A Bombay American Agency.

In a letter I have recently received from Bombay oceur the following words: "The travelers among mills are taking home satisfactory orders for machinery. The monsoon is already reported in Colombo, and there is therefore a good agricultural prospect, which always puts money in circulation. The American Hardware agency is doing very well here, and has done a steadily increasing business for several years, in spite of both plague and famine." The announcement of another famine by Lord Curzon had led many merchants to fear that trade in India would continue to be depressed. It is certainly interesting to hear from an influential source that trade prospects in India are not nearly so gloomy as has been supposed in various quarters.

Eastern Europe.

In Servia there is a healthy demand for cheap Galvanized Iron Plates. If a trade, however, is to be done with these goods, special attention should be paid to packing and numbering. A consignment of 20 tons of Galvanized Iron Plates recently arrived in Belgrade, without attention being paid to this essential point. Not a single bundle was sent there in a salable condition. The Austrian Galvanized Plates are in strong demand in Servia. The same remarks apply to Tin Plates. It is stated that at the present moment the market is favorable to the importation of Black Iron Plate, which is being purchased in large quantities from Austria-Hungary. Austrian price is 22 Kr. (\$3.75) per 100 kg. (220 lbs.), f.o.b. Belgrade. The Germans are cultivating this market very vigorously. The difficulty is to find suitable means of communication between Belgrade and the Mediterranean Sea, and so reduce the cost of transport. Cheap and inferior goods sell readily in Servia.

In the Vilayet of Trebizond, Turkey, the following goods were imported during 1900: Hardware, Cutlery and Nails, 26,570 cwt., valued at \$150,000; Iron, 22,020 cwt., valued at \$40,000; Metals (Lead, Zinc and Steel), 2560 cwt., valued at \$12,000; Tin Bars and Plates, 1300 cwt., valued at \$20,500.

In the Vilayet of Adana there is a good opening for Agricultural Implements, chiefly Harvesters, of a very light yet strong kind. In this respect America is ahead of Great Britain, and sells a large number all over Turkey. More than 100 American Harvesters were sold in this Vilayet last year. They are reported as being light, durable and cheap.

The island of Syra, one of the Cyclades, in the Kingdom of Greece, purchased from Great Britain last year nearly \$800,000 worth of goods, a considerable proportion of which was Iron Ware. The trade done with Germany during the same period amounted to \$125,000.

CUBA.

· From Knight & Wall Company, Havana, Cuba, Importers of General Hardware and Associated Goods:

There is abundant capital in Cuba and the merchant who handles his goods and wares properly is certain of a living at least, while the chances are greatly in his favor toward a comfortable retirement in a few years if he meets with that success which usually follows thrift and economy. Especially is this true in the Hardware line, where deterioration is less than in many others. Improvements and inventions are constantly being made, and naturally the back numbers are gradually forced out, although it may take years, and even centuries, for the new to supplant the old. This is noticeable in Cuba, where the same style of Architectural and Builders' Hardware, Agricultural and other Implements have obtained for centuries. However, with the exit of Spanish rule and the advent of American progressiveness, capital and accompanying necessities and comforts for existence, all this will be revolutionized. Already many innovations have been introduced, and a few years will witness an altogether different condition of things in the island.

POLITICS INTERFERING WITH ADVANCEMENT.

Unfortunately just at this time politics are interfering greatly with advancement, but certainly these people will wake up soon and leave the politicians to follow their profession, when they will look after their own affairs.

CONCERNING THE TARIFF.

High tariff in the United States on our sugar and tobacco, where practically all of both products go, operates greatly against us. With a stable government, a favorable tariff and some few other minor reforms the island of Cuba will become one of the richest fields for trade on the globe.

HOW TO CULTIVATE THE TRADE.

American goods are growing in demand every day and the merchants here would prefer to purchase from the United States, prices being equal to or not exceeding those of Europe, and the American merchants giving the same care and attention to shipments as do their European competitors. To more fully explain, the European dealer makes his invoices out correctly. It is a rare exception to find an American invoice that does not occasion a fine against the consignee by the custom house in Havana. Why this is must be explained by one of two words-ignorance or carelessness. You can readily see why the man at this end is not willing to pay duties and have his profits swept away by fines he is in no wise responsible for. We have been frequently fined, and it is discouraging, and discouraging to such an extent that these people will not buy from the States until there is a change in the methods pursued by the American merchants. It is certainly presumptuous and a great mistake on the part of the American dealer to expect to build up any trade here unless he can compete with his friends in England, Germany and France in prices, packing and invoicing. The matter of packing is no small item; we get goods from Europe intact, while frequently packages from the States are torn to pieces and some of the articles belonging therein missing.

SOME LINES OBTAINED FROM UNITED STATES

The United States controls the market here at present in Iron Pipe and Fittings, Barb Wire, Oils, Packings, Agricultural Implements, and some lines of Paints, &c. Linseed Oil is imported extensively from England, and will continue to be, as it is largely adulterated and consequently cheaper. Galvanized Sheet Iron, Sheet Zinc, Agate Ware and all that class of goods are bought cheaper in Europe. The greater portion of Builders' Hardware and some other classes of goods not made in the United States come also from Europe, as they are manufactured specially for this trade.

There is little doubt that the United States can control a large business with Cuba, but that trade cannot be expected by the merchant or manufacturer who think these people will accept slipshod and careless methods.

GERMANY.

From a Prominent German Iron Manufacturing Company:

We can only tell you that the German works oppose the import of American goods very energetically and cover their wants in their own country as far as possible; they will spare no efforts to prevent American products entering our home markets. The prevailing tendency of forming syndicates here will only help them in this respect.

HAWAIIAN ISLANDS.

From a Honolulu house:

It seems rather strange that the mercantile situation as between the United States and the Hawaiian Islands should be so little understood by the manufacturers and wholesalers of the United States. An immense amount of literature has been written concerning these islands, previous to and particularly since the year 1893.

This country has been American in its association, both in business and politics, beginning more than 20 years before the discovery of gold in California in the year 1849. For the last 30 years the United States has been almost the exclusive source of supply for nearly everything that relates to the Hardware business, the

only exception being coarse manufactures of Iron. All Shelf and Builders' Hardware, Mechanics' Tools, Agricultural Tools and Implements, Cutlery (with the exception of Pocket Knives), Machinery, Steel Rails and Beams, all classes of Nails, Lubricating Oils, Varnishes, Paints, Brushes, &c., have been procured in the United States.

The English and German markets controlled, previous to annexation, Galvanized Corrugated Iron Roofing and Fence Wire, and have furnished this market quite extensively with Bar and Norway Iron, Galvanized Buckets, Boiled Oil, White Lead and Coal Tar (now, however, furnished from the United States).

We may sum the matter up in a few words: The United States has controlled the market of Hawaii for 30 years and over, with few exceptions.

The plantations on these islands are of vast proportions and immense capital, the majority of them ranging from \$3,000,000 to \$5,000,000. A large number of these depend upon irrigation, and not upon natural rainfall, and the water is supplied by means of enormous pumping plants, some of the plantations requiring nearly \$0,000,000 gallons of water each per day, raised to hights varying from 100 to 650 feet.

Nearly all these plantations are controlled by the agents and owners, who are directly or indirectly engaged in the merchandise business, so that the supplies for the islands largely come through the houses controlling the plantations.

The islands have a heterogeneous population, consisting of some 65,000 Japanese, 28,000 Chinese, 35,000 full and half blood natives, 16,000 Portuguese and 15,000 whites of various nationalities, the Americans largely predominating.

All the large business houses have their agents in San Francisco, New York or Boston, frequently salaried, and holding some direct interest in the business.

From the foregoing you will understand that this is not a new country to be exploited, as the merchants here have been accustomed for years to purchase their requirements from first hands and to discount their bills. The capital employed is usually much larger than similar houses would operate upon in the United States.

The merchants are progressive and aggressive, and anxious to have brought to their attention anything that is suitable to the conditions and requirements of the islands.

It can be easily understood that every worthy producer in the United States cannot be fully represented in the islands, for no merchant can, in a community of this size, duplicate lines and do justice to either himself or any one else.

The stocks carried here are very large in comparison with those carried elsewhere, when the total of business is considered. This is occasioned by our comparative isolation. A large amount of coarse and heavy goods are shipped via Cape Horn, on account of the saving of freight.

Communication is becoming very frequent, as the islands lie directly in the course of steamship lines bound to and from the Orient and Australia. It is not an unusual thing for several trans-Pacific steamers to enter and leave this port in one day, and when all the projected lines are in operation it is quite probable that not less than 25 or 30 steamers per month will touch at this port.

At present business is somewhat dull and of less volume than last year, as at that time there were a number of new plantations and enlargements, involving an expenditure of some \$20,000,000, in progress, which are now nearing completion.

H. M. Sanders & Co., Boston, Mass., have taken the whole building at their old stand, 27-29 Eliot street, and by extensive alterations and improvements feel assured that they will be better able to meet the demands of their increasing trade. They are now ready for the fall business with a large and well selected stock of Builders' Hardware, Paints and Oils, Cutlery, Mechanics' Tools, &c.

THE OHIO HORSE SHOE COMPANY.

THE OHIO HORSE SHOE COMPANY, Columbus, Ohio, were incorporated on August 5 with a capital stock of \$100,000. The officers of the company are W. F. Hoffman, president; W. P. Tyler, vice-president; H. E. Simons, treasurer, and E. T. Simons, secretary and general manager. The company have been organized for the purpose of making and putting on the market the Hollow Grip Horseshoe. For the present the Shoes are being made on contract by a Chicago foundry, and if this method proves profitable it will be continued. The Shoe is made of malleable iron so that it may be worked and put on without heating. The object of the Shoe is to give the foot an even bearing on the whole surface of the Shoe and to keep a horse from slipping on any kind of pavement. It is made with a hollow or deep groove, leaving an edge around the outer and inner side of the Shoe so as to have a double calk all around the Shoe.

AMONG THE HARDWARE TRADE.

Elliott & Son's Hardware stock at Eddyville, Iowa, was almost totally destroyed by fire on the 10th ult. Their loss was \$2600, with insurance of \$1500. They are now erecting a new building and will carry a much larger stock than heretofore.

Stubbs & Jakway, dealers in Hardware, Sporting Goods, Agricultural Implements, Bicycles, Buggles, Wagons, Harness, &c., Durango, Col., have recently moved into a new store, which has been laid out with special heed to the requirements of the business. While the general plan of the store is simple, both as a whole and in detail, the question of economy of space has received much attention and a number of contrivances for the arrangement and display of goods have been adopted. In the basement, besides a large amount of stock, are the Bicycle repair department, and also a tin shop and shop for repairing Mowing Machines. The firm are intending soon to build a warehouse in the rear of the store.

Peter Lofgren is successor to Lofgren & Merdink, Pelan, Minn., dealers in Hardware, Farming Implements, lumber, furniture, &c.

J. M. Thompson has succeeded Walter J. Miller in the Hardware, Agricultural Implement and lumber business in Iantha, Mo.

Stroner & Backus, dealers in Hardware, Crockery, Glassware, &c., Mayfield, Cal., have been succeeded by Mayfield Hardware Company, F. W. Backus assuming control of the business.

Best & Thompson, dealers in Hardware, Stoves, Crockery, Bicycles, Tinware, &c., Libby, Mont., have opened a branch store at Jennings, Mont.

Thompson & Dufur, Fairfax, S. D., have bought the Hardware part of the general stocks of C. A. Johnson & Co., Horst & Trautmann and Forbes & Co. of that place and will combine the goods thus purchased with their own stock of Hardware, Tinware, Stoves. &c.

Stokes-Evans Hardware Company, wholesale and retail dealers in Shelf and Heavy Hardware, Stoves and Tinware, Agricultural Implements, Sporting Goods, Furniture, &c., Macon, Miss., have moved to more commodious quarters, which have been modernly equipped throughout. Their main store is 80 x 190 feet in dimensions.

The Brown-Hurley Hardware Company have been organized to engage in the wholesale Hardware business in Des Moines, Iowa. The company have purchased the J. D. Seeberger stock from the Seeberger estate, and as soon as an inventory now being taken is completed will take possession of it and commence business. The company have a paid up capital stock of \$200,000. Among the stockholders in the new company are W. S. Brown of Duluth, largely interested in jobbing concerns in

Minhesota; T. E. Hurley, present manager for the Seeberger estate and who has been identified with the business for 15 years; H. A. Miller, cashier of the Des Moines Savings Bank; E. W. Brown, who has been with

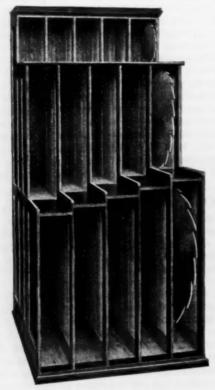


Fig. 1 .- Circular Saw Case.

the Seeberger house for 15 years; F. J. Camp, who has served with the house a like period; C. C. Prouty, president of the C. C. Prouty Company; W. S. Lacy, who has been a traveling salesman for the Seeberger house for a number of years; D. Close, who comes from Duluth and has been associated with Mr. Brown in business in that city. W. S. Brown will be president, E. W. Brown, vice-president; T. E. Hurley, secretary; F. J. Camp, assistant secretary, and H. A. Miller, treasurer. The directory board is composed of J. G. Berryhill, W. O. Finkbine, W. S. Brown, T. E. Hurley, H. A. Miller, E. W.

finished, and the whole utensil is neatly finished and suitable for ordinary family use.

Warren's Store Fixtures.

The circular saw case shown in Fig. 1 has 15 compartments, five in each row. It is arranged to hold saws up to 60 inches in diameter. A portion of a section is illustrated in Fig. 2 of combined builders' hardware cabinets and bases. The cabinets have sliding glass doors in front to protect the samples from dust and tarnish, these being on doors hung on butts. Special patterns mounted on separate boards may be carried in the drawers in the bases, thus enabling employees to show the various patterns and to find the stock easily. The

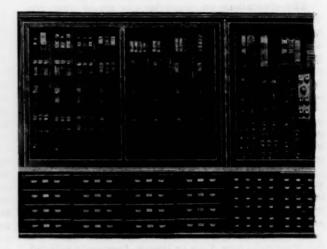


Fig. 2.-Combined Builders' Hardware Cabinets and Bases.

fixtures are manufactured by the J. D. Warren Mfg. Company, Chicago, Ill.

Simplicity File Handle.

Nicholson File Company, Providence, R. I., are manufacturing the Simplicity patented file handle, here illustrated. The method of holding the file tang without the necessity of a ferrule is accomplished by means of a series of three concentric holes bored in the end of the handle. The outer one is the widest, about % inch di-

OF OF PRO BUMPANES

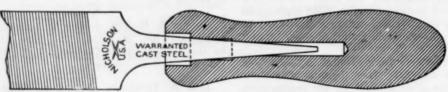


Fig. 1.—Simplicity File Handle as in Use.

Brown and Harry West. The new company will make every effort to hold and extend the large business enjoyed by the Seeberger house for so many years.

C. F. Myers, Westport, Ind., has disposed of his Hardware, Stove, Tinware, Agricultural Implement and Sporting Goods stock to Tripp Bros., who have moved the goods to their own building. They also conduct a store at North Vernon.

The Hardware and Farm Implement stock of A. M. Payne, Youngstown, Kan., was burned out on the 6th ult., the loss being \$2000, with insurance of \$900. Mr. Payne has just resumed business on a smaller scale.

Family Cleaver.

Central Hardware Company, Philadelphia, Pa., for whom C. E. Peabody, 90 Chambers street, New York, is manager of their Eastern branch, have put on the market a family cleaver made to sell at the popular price of 10 to 15 cents by the retailer. It is 10½ inches long over all, has a polished steel blade nearly ½ inch thick and 6 x 3½ inches square. The skeleton iron handle is japan

ameter and extends into the handle ½ inch; the second hole, about one-half the diameter of the first or outer hole, goes ½ inch further into the handle; the third hole is about one-half that of the middle one and extends more than half the length of the handle. Thus the greatest pressure comes at the strongest part of the handle, or the third and narrowest hole, making it quite difficult

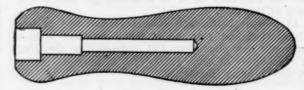


Fig. 2.—Sectional View of Handle and Holes for Tang.

to split the handle by exerting the greatest strain to the center, there being scarcely any pressure at the end opening. In the manufacture of this handle the best kiln dried hard wood stock is used and the surface shellac finished, affording the workman a firm and comfortable grip. The manufacturers emphasize particularly the simplicity, durability and moderate price of this handle.

Current Hardware Prices.

REVISED AUGUST 27. 1901.

General Goods.—In the following quotations General Goods—that is, those which are made by more than one manufacturer, are printed in *Italics*, and the prices named, unless otherwise stated represent those current in the market as obtainable by the fair retail Hardware trade, whether from manufacturers or jobbers. Very small orders and broken packages often command higher prices, while lower prices are frequently given to larger buyers.

Special Goods.—Quotations printed in the ordinary type (Roman) relate to goods of particular manufacturers, who are responsible for their correctness. They usually represent the prices to the small trade, lower prices being obtainable by the fair retail trade, from manufacturers or jobbers.

Range of Prices.—A range of prices is indicated by means of the symbol @. Thus 33½ &310% signifies that the price of the goods in question ranges from 33½ per cent. discount to 33½ and 10 per cent. discount.

Cut Prices.—In the present condition of the market there is a good deal of cutting of prices by the jobbing trade, whose quotations are often lower than those of the manufacturers.

quotations are often lower than those of the manufacturers.

Names of Manufacturers.—For the names and addresses of manufacturers see the advertising columns and also The Iron Age Index Supplement (April 4. 1901), which gives a classified list of the products of our advertisers and thus serves as a directory of the Iron, Hardware and Machinery trades

Standard Lists.—A new edition of "Standard Hardware Lists" has been issued and contains the list prices of many leading goods.

Additions and Corrections.—The trade are requested to suggest any improvements with a view to rendering these quotations as correct and as useful as possible to Retail Hard-

count to 83% and 10 per cent. di	scor
Adjusters Bilind-	Conc
Domestic, # dos. \$3.00, 331/2331/2105	No.
Domestic, \$\psi\$ dos. \$3.00331/2331/2105 North's	No. 1
Window Stop-	No. : Nos.
Taplin's Perfection	Nos. Nos.
Ammunition—See Caps, Car- tridges, Shells, &c.	Com
Anvils-American-	Com
Bagie Anvils P n 74/474/6 Hay-Budden, Wrought 96/94/6 Horseshoe brand, Wrought 96/94/6 Hamson P n 74/40/6 Trenton, Wroight D n 8/4/48/6	Hali Cald Pulli
IIIIDOI teu—	1111
Anvil, Vise and Drill-	Spri
Millers Falls Co., \$18.00	Lig
Apple Parers-See Parers,	Cir. Lai
Aprons, Blacksmiths'-	B
Hull Bros. Co.:	Stee
Hull Bros. Co.: 25% Lots of 1 dos. 25% Smaller Lots. 20% Lots of 3 dos. 30%	Scal
Augers and Bits-	Chat
Com. Double Spur70@	B
Boring Machine Augers	Stan No No
Car Rite 18-in tunst 60@604104	No No
Auger Bits 50d 10d 5@60%	
Forstner Pat. Auger Bits	Tapl
Jennings' Puttern Auger Bits	No No
Russell Jennings'	
Mayhew's Countersink Bits45% Pugh's Black	No No
Pugh's Jennings' Pattern	Lyo
Snell's Bell Hangers' Bits50&10% Snell's Car Bits, 12-in. twist60%	B
Wright's Jennings Bits (R. Jennings'	Bla C. E C. E
Standard List	In E
Clark's small, \$18; large, \$26 50&10\$	Ext
Clark's small, \$18; large, \$2050&10; Lavigne's Clark's Pattern, No. 1, \$2, 60, \$25; No. 2, \$1850&105 O.E. Jennings & Co., Steer's Pat3345	1
	Inc
Gimlet Bits-	Doz
Gommon Double Cutgro. \$2.25@2.75 German Patterngro. \$3.25@4.50	Inc. Doz
Bonney Pattern, per doz. \$11.00@11.50	В
New Patent 25&10¢	Ord Hig
Universal	Jers Tex
Ship Augers and Bits- Ford's 406	Abb
Ford's	Bar Hon Leve
Sanil's	Leve
Awi Hafts, See Hafts, Awl.	Han
Awis- Brad Avils:	Wh Nic
Handledgro. \$2.75@3.10	Swi
Handledgro. \$2,75@3.10 Unhandled, Shouldered.gro.63@66c Unhandled, Patentgro.66@70c	Buly
Pog Awls: Unhandled, Patentgro. 31@34c Unhandled, Shouldered.gro.65@70c	Stee
Scratch Ands:	Nati
Scratch Arils: Handled, Commongro. \$5.50@4.00 Handled, Socketgro. \$11.50@12.00	WIL
Awl and Tool Sets-See	Agr
Sets, Aud and Tool. Axes First Quality, best brands, \$5,50@5.75	Con
First Quality, best brands, \$5,50@5,75 First Quality, other brands \$5,25@5,50	Sta Ext

Husters Blind-	Concord Loose Colley 1110	h
ijusters Bilnd-	Concord, Solid Collar 184@50 3	SI
satic, \$ dos. \$3.003336@3836&105	No. 1 Common	
a's	No. 1. Solid Collar	R
Patent	Nos. 11 to 14	
n's Perfection50%	Nos. 19 to 28	
mmunition—See Caps, Car- ridges, Shells, &c.	Axles— Iron or Steel. Concord, Loose Collar	
nvils-American-	5, 14 0 44 6	8
anvils. P n 74.07% Budden, Wrought. 9.094 eahoe brand, Wrought. 9.094 son. P n 7.408 ton, Wrought. P n 8.408 son.	Half Patent	~
on P 7-6684	Caldwell new list50s	J
imported—		
r Wright's014@944	Chatillon's:	
nvil, Vise and Drill— rs Falls Co., \$18.00	Light Spg. Balances 40&10%	
pple Parers—See Parers, Apple, &c.	Large Dial	
Apple, &c.	Barb Wire—See Wire Rarh	
prons, Blacksmiths'-	Perouse	
Bros. Co.: ts of 1 dos	Booms S - 1 to 10 10 10 10 10 10 10 10 10 10 10 10 10	
ts of 3 doz80%	Scale Beams, List Jan. 18, '82.30&101	
ugers and Bits-	Chattilion's No. 1	
ing Machine Augers70@\$	Beaters- Egg-	1
60 & 10 & 10 @ 70 & 10 \$	No. 5 Steel Handle Dover. 9 gro. \$6.50 No. 10 Cast Handle Dover. 9 gro. #8.00	1
nings' Pattern	No. 10 Steel Handle Dover. 9 gro. \$8 00 No. 15 Extra Heavy Steel Handle.	1
l's Auger and Car Biss40&104	Beaters Egg— Standard Co.: No. 5 Steel Handle Dover. # gro. \$5.50 No. 10 Cast Handle Dover. # gro. \$5.00 No. 10 Steel Handle Dover. # gro. \$5.00 No. 15 Extra Heavy Steel Handle, Bival, # gro. \$15.00	1
Jennings & Uo.:	Taplin Mfg. Co.: # gro. No. 50 Small Family size. #6.50	2
80. R. Jennings' List 50%	No. 10 Extra neary steel Handle, \$\pi \text{gro}\$ = \text{15,00}\$ Taplin Mfg. Co.: \$\pi \text{gro}\$. \$\pi \text{gro}\$. No. 50 Small Family size. \$\pi \text{9.50}\$ No. 100 Regular Family size, tinned. No. 102 Regular Family size, tinned.	
Bits. 18-in. twist	No. 150 Large Family size\$15.00 No. 152 Large Family size, tinned	4
h's Black	No. 152 Large Family size, tinned \$17.00 Lyon's, Standard size	
l's Auger Bits	Lyon's, Standard size	9
ll's Car Bits, 12-in. twist	Bellows— Blacksmith, Standard List, 70@70&105 C. E. Jennings & Co. Blacksmith . 60&105 C. E. Jennings & Co. Hand	1
t)	C. E. Jennings & Co., Blacksmith. 60&105 C. E. Jennings & Co., Hand. 83142	1
Bit Stock Drills— adard List	Blackmiths-	1
Eunanelya Dita	Blackmiths— Inch 30 38 34 38 38 40 Each. \$3.50 3.75 4.25 4.30 5.35 6.15	1
k's small, \$18; large, \$26 50&10\$	Extra Length: Each.\$4.00 4.55 5.10 5.60 6.40 7.50	
k's small, \$18: large, \$26 50&10x lgne's Ciark's Pattern, No. 1, \$6 dos., \$26; No. 2, \$18 50&10x Jennings & Co., Steer's Pat 334% n's	Molders-	1
n's	Inch 9 10 11 12 14 16 A Doz\$6.75 7.25 8.50 9.50 12.00 14.50	
Gimlet Bits— nmon Double Cutgro. \$2.25@2.75	Hand-	1
man Patterngro. \$3.25@4.50	Inch 6 7 8 9 10 18 Doz\$3.75 4.25 4.50 5.00 5.7 6.75	
Hollow Augers— mey Pattern, per doz. \$11.00@11.50	Relle- Cow-	ľ
Patent 25&105	Ordinary goods	
versal	High grade	
hip Augers and Bits-	Abbe a Gong	1
1's 405 1's 402 Jennings & Co.: 15&134	Home, R. & E. Mfg. Co.'s	
Hommedieu's	Lever and Pull, Sargent s 40@40&10% Yankee Gong	
wi Hafts, See Hafts, Awl.		
wis- id Avile:	White Metal	
andledgro. \$2,75@3,10 nhandled, Shouldered.gro.63@66c nhandled, Patentgro.66@70e	Stries	
nhandled, Patentgro. 68@700	Miscellaneous— Farm Bells	1
Awls: nhandled, Patentgro. 31@34c	Steel Alloy Church and School	ľ
nhandled, Shouldered.gro.65@70c	National Bell Foundry Co.: 604:1045@60%	1
landled, Commongro. \$3.50@4.00 landled, Socketgro. \$11.50@12.00	National Bell Foundry Co.: Superior Cast Steel Church and School Bells	1
wi and Tool Sets-See	Belting— Rubber— Agricultural (Low Grade).75&10@80%	1
Sets, Avel and Tool.	Agricultural (Low Grade).75&10@80% Common Standard75@75&10%	1
xes— st Quality, best brands.\$5,50@5.75 st Quality, other brands\$5,25@5.50	Standard70@70@10%	
bers' Special Brands:	Extra	1
lood Quality	High Grade 50&10@50&10&5% Boston Belting Co. Seamless Stitched, Imperial45&5%	
est Qualit»	Boston	1
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Leather-	

ware more manus.	
Regular Short Lap 60&10@60&10&654 Standard	Bo
Cotton-	I
Rossendale-Reddaway B. & H. Co.: Sphinx Brand	_ F
Bench Stops—SeeStops, Bench	Ent
Benders and Upsetters,	
Green Diver Tire Benders and Huset.	C. I
ters	N
Bicycle Goods— John S. Leng's Son's 1899 list;	Con
Chain	Bar
Spokes	Fra
Bits-	Fra C. I Ma Ma
Auger, Gimlet, Bit Stock Drills, &c.— See Augers and Bits.	Ma P.,
Bit Holders—See Holders.	
Blind Adjusters—See Ad-	W
justers, Blind. Blind Fasteners—See Fac-	Bra F B
teners, Blind, Blind Staples—See Staples,	Gri
Blind.	-
Blocks- Tackle-	Wi
Common Wooden	W
Hollow Steel, Ford's Pat. Star Brand	2
Lane's Patent Automatic Lock and	Bo
Junior	Ho
Junior 30% Stowell's Novelty, Mal. Iron50&10% See also Machines, Hoisting.	W
Boards Stove— Zinc, Crystal, &c 10&10@	Car
Bolts-	Fa
Carriage, Machine &c	Fa
Common, list Jan. 30, '9585&5@\$ Norway Iron, \$3.00, list Oct. 7, '84 80@80&5%	Lo
Phila. Eagle, \$5.00 list May 24, '99 80@80&10\$	Pa
Bolt Ends. list Jan. 30, '95.70&71/4@ %	Ta
Bolt Ends, list Jan. 30, '95, 70&7140 & Machine, list Oct. 1, '99 70&56 & Machine with C. & T. Nuts	In
NOTE—The rapid advances in manufacturers prices enable the jobbers to cut	Lo
prices freely.	Ja
Cast Iron Barrel, Round Brass	Br
Knob:	
Inch 3 4 8 6 8 Per doz\$0.26 .30 .39 .47 .65 Cast Iron Spring Foot:	He
Inch 6 8 10	3
Per doz \$1.00 1.25 1.75 Cast Iron Chain, Flat, Japanned;	He
Inch 0 8 10	He
Cast Iron Shutter, Brass Knobs:	1
Inch	Bl. Sh
	Per
Per doz \$0.44 .50 .61 .70 1.28 Wrought Barrel 70&10@75&5\$	C
Wrought Bronzed.40&5@50&10\$	mi
Wrought Shutter 10 & 10 & 10 @ 60 & 54	lo: Bu
Per doz	Ne
Stove and Plow-	Ba
Plote	Bu
Tire-	
Norway Iron80@80&5%	G.
Norway Phila. list Oct. 16, '848234%	F.G.
Bay State, list Dec. 98, 9977%	M
Norway Phila, list Oct. 16, '84, 894; Eagle Phila, list Oct. 16, '84, 894;	Be
Eclipse, list Dec. 28, ' 9	B.
Common	A
Norway Filla , list Out. '5489%	1

5%	Borers, Tap— Borers Tap, Ring, with Handle: Inch
5%	Borers Tap, Ring, with Handle:
10%	Per doz 41.30 5.00 5.75 7.95
	Inch 314 21/4
0%	Per doz \$4.00 0.00 4 2% Per Doz
ch	2, \$1.65; No. 3, \$2.50 each25%
8,	Boring Machines - Nee Ma-
,	Boxes. Mitre-
2	Boxes, Mitre— C. E. Jennings & Co
10%	Braces-
10%	Braces - Norm - Most Braces are sold at net prices.
	Common Ball, American \$1.15@1.25
50%	Barber's 50&10&10@60&10\$ Fray's Genuine Spofford a
0%	Fray's No. 70 to 120, 81 to 133, 907 to
10%	C. E. Jennings & Co
- 1	Mayhew's Ratchet
- 1	prices. Common Ball, American. \$1.15@1.25 Barber's. 50&10&10@50&10\$ Fray's Genuine Sponford s
	Brackets— Wrought Steel 75&5@.75&105 Bradley's Wire Shelf: Full cases
- 1	Wrought Steel 75 & 5@ 75 & 10%
ae-	Full cases80%
AC-	Broken cases
.	Griffin's Folding Brackets70&10
	Wire and Wire Goods
104	Brollers-
10%	Brollers- Wire Goods Co
105	See Pails
	Bucks Saw-
10%	Boss
10%	Bull Rings-See Rings, Bull.
10%	Buil Rings—See Rings, Bull. Butts— Brass—
-	Wrought list Sept., '9840@40&55 Cast Brass, Tiebout's
%	Cast Brass, Tiebout's
	Fast Joint, Broad
	Loose Joint
è5%	Loose Pin70&5@70&10%
	Parliament Butts70 & 5 @ 70 & 104
10%	Wrought Steel-
%	Narrow and Broad 604104
	Narrow and Broad. 664.10s. Inside Blind 6694 Loose Pin. 70c.10s Loose Pin, Ball and Steeple
 1314-	Loose Pin. Rall and Steenle
CHE	Tip70&10%
	Tip. 70&105 Standard Steephe Standard Standard Steephe Standard Steephe Standard Steephe Standard
	Butts
8	Cages, Bird-
.65	Hendryx, Brass:
10	Hendryx, Brass: 3000, 5000, 1100 series
.75	200, 300, 600 and 900 series40&10s
10	700, 800 series
.30	Caitpara—See Company
10	200, 300, 600 and 900 series 40210; Hendryx Bronse: 40210; Calipers—See Compasses, Calks. Toe and Heel— Blust, 1 prong per lb 34646 Sharp, 1 prong per lb 46446 Perkins' Blunt Toe 8 5 345 Perkins' Sharp Toe 8 5 345 Can Openors—See Openers, Can
1.00	Sharp, 1 prongper lb3%@40
8	Perkins' Blunt Toe B 5 814
.28	Can Openers—See Openers Can
26%	Cans, Milk-
10% 10%	
55%	lows Pattern 2.40 2.60 each,
10%	Illinois Pattern. 1.75 2.10 2.25 cach.
10%	New York Patt'rn3.00 3.25 3.40 each, Baltimore Patt'rn2.50 2.85 3.10 each,
. 4	Cans, Oil-
%×	\$48.00 60.00 108 gro
	\$48.00 60.00 10 gal.
%% 05%	Eley's E. B
	F. L
85%	G. Eper M 47@500
36%	108 gro
85%	Berdan Primers, \$1.00
365	Berdan Primers, \$1.00
1168 868	\$1.00. All other primers \$1.10@\$1.13 Carpet Stretchers Carpet.
85%	Carpet Stretchers-
	See Stretchers, Carpet.

82	III IKO	N HGB	
Cartridges-	Clamps-	Cultivators-	E
Blank Carridges: 32 O. F., \$5.50	Clarry ps. Adjustable Hammers'	Cutlery, Table-	Ter
28 C. F., \$7 00	Darriage Makers' Sargent's50&104	International Silver Company: No. 12 Medium Knives, 1847 doz. \$3.50 Star, Eagle, Rogers & Hamilton and	8
32 cal. Rim. \$2.7510&5@10&10%	Lineman s, Utica Drop Forge & Tool	Star, Eagle, Rogers & Hamilton and Anchor	8
B. B. Caps, Con., Ball Swgd. \$1.80@1.85 B. B. Caps, Round Ball \$1.10@1.15	Lineman s, Utica Drop Forge & Tool Co	Star, Engie, Rogers & Hamilton and Anchor	Se
Central Fire	Star Socket, All Steel & doz. \$4.00 net	No. 77 Medium Knives doz. \$2.50	E
Primed Snells and Bullets	W. & C. Snank, All -wel, 716 to. @ d .z.,	Cutters- Glass-	
Rim Fire Sporting	Cleavers, Butchers'-	H. H. Mayhew Co	Fa. Per
Casters—	New Haven Edge Tool Co.'s405	Hale's., Nos. 11 & 111 13 & 112 13 & 118	
Bed	Clienvers Butchers	Per doz. \$10.80 13 20 18.00 American	Ke
Philadelphia	Clippers-	Rach\$5 \$7 \$10 \$25 \$50 \$60	36.
Boss Anti-Friction	Handy Toilet	No., 20 40 60 8 10 13	10-
Casters Red Red	Chicago Plexible Shaft Company Handy Tollet	Enterprise	10-N 10%
	Clips Axle— Eagle and Superior 4 and 5-16	Each \$2 \$3 \$2.50 \$4 \$6 Dixon's, \$\psi \text{doz}	E
Chain, Coll—	inch. 70d:10s Norveay, 15 and 5-15 inch. 70d:10s Cloth and Netting, Wire —See Wire, de. Cocks, Brass— Hardware list:	Nos. 1 2 3 4 4 17.00 \$19.00 \$30.00	1
Norz.—The following prices are f. o. b. Pittsburgh. Manufacturers in quoting	Cloth and Netting, Wire	Little Giant, # doz	1
Chain, Coll- Note.—The following prices are f. o.b. Note.—The following prices are f. o.b. Wanufacturers in quoting sensity and freight to destination. American Coll. Cask lots:	Cocks, Brass-	\$98.00 \$48.00 \$44.00 \$73.00 \$68.00 Sterling 83144-56	F
7.75 5.80 4.85 4.00 3.85 3.75 3.55	Compression and Plain Bibbs, 65 & 55	Nos	Zi
3.55 3.50 per lb. 11/4 to 11/4 inch. 3.75 per 100 lb.	Globe, Kerosene, Racking, &c., Cocks	New Triumph No. 605, \$\P\$ doz. \$24.00 30&10@40\$	Co M
Less than Cask tots add 25c.	Cocks	Hale's, Nos, 11 & 111 19 & 118 15 & 118 Per dox. \$10.90 13 20 18.00 American \$30.80 American \$10.80 American \$2.80 Ameri	Re
German Coll.list July 24, 797.60 £10 £10 £10 £ Halters and Tles— Halter Chains	Brass, Pope & Stevens' list405 Embossed, Gilt, Pope&Stevens' list80&105	Chadborn's Smoked Beef Cutter, # dos.	B.
German Halter Chain, list July 24,	Compasses, Dividers, &c.	Enterprise Beef Shavers25@30%	100
German Halter Chain, list July 2h, '97	Ordinary Goods70&10@75%	Slaw and Kraut-	Jo
Traces, Western Standard: 100 pair	Dividers	Slaw, Corn Grater, &c	Jo
6½-6-3, Straight, with ring\$30.00 6½-6-2, Straight, with ring\$31.00 6½-8-3, Straight, with ring\$35.00 6½-10-2, Straight, with ring\$38.00	Bemis & Cai Haw. & Tool Co.: Dividers		Jo
6½-8-3, Straight, with ring. \$35.00 6½-10-2, Straight, with ring. \$38.00	Campasses 50%	Kraut Cutters	Jo
Add 3¢ per pair for Hooks. Twist Traces 3¢ per pair higher than	Compressors Corn Shock-	Tobacco	Jo Jo
Straight Link. Trace, Wagon and Fancy Chains	Conductor Pipe, Galva	All Iron, Cheapdoz. \$4.25@\$4.50 Enterprise	Jo
Miscellaneous-	L. C. L. to Dealers: Territory. Not nested. Nested.	National, # dos. \$21.00	M
Iron	Central 65 @ 10% 70%	Washer— Appleton's, \$ dos. \$16.0050&10&10\$	8e
Brass	8. Western. 60d 19/45 60d 155	Appleton's, \$\psi\$ dos. \$16.0050&10&105 Bonney's	
Gal. Pump Chainlb. 44@4%c Dovert Mfg. Co.:		Diggers, Post Hole, &c	
Breast	Jobbers receive extra 13% &2% on car- loads loose, and extra 12% on car- loads crated.	Dalbey Post Hole Augerper doz. \$9.00 Iwan's Improved Post Hole Auger40% Iwan's Perfection Post Hole Digger	
Jovert Mfg. Co.: 35&2% Breast. ,95&2% Halter. ,85&2% Heel. ,85&2% Rein. ,35&2% Stallion. ,55&2% Covert Sad. Works: ,70% Halter. ,70% Hold Back. ,70% Rein. ,70% Rein. ,70% Rein. ,70%	See also Eave Troughs. Coolers, Water- Nos	iwan's Perfection Post Hole Digger dos. \$9.00	B
Stallion	Labrador \$11,50 \$14.00 \$17.50 \$20.00	Kohler's Little Giant doz. \$14.00	G F
Halter	8 ga'. \$21,00 Not 8	Kohler's Invincible doz. \$12.00	S
Hold Back. 495 Bellin. 705 Dneida Community:	Nov	Wan Ferrection Post Hole Digger.	8
Am. Coll and Halters50&10&5@60% Am. Cow Ties35&5@40&5%	Coopers' Tools— See Tuols, Coopers'.	\$24.00	A
Eureka Coll and Halter60@40&5% Niagara Coll and Halter60@60&5%	See Tuols, Coopers'.	DIVIDORS - Tee Compasses.	
		Dog Collars—See Collars, Dog. Door Checks—	P
Dog Chain	Cable Laid Italianlb. A, 18c; B, 16c Common Indialb 9 @94c Cotton Sash Cord, Twisted18@16c	See Checks, Door.	8
Chalk-(From Jobbers.) Carpenters' Bluegro. 42@45c	Cotton Sash Cord, Twisted 12@16c Patent Russia	See Springs, Door.	8
Carpeniers' Bluegro. 42@45c Carpenters', Redgro. 37@40: Carpenters', Whitegro. 33@35c	Cable Laid Pussialb. 184@14c	Doors, Screen-	
See also Crayons. Chalk Lines—See Lines.	India Hemp, Twisted lb. 10@12c	Porter's Plain, No. 6	
Checks, Door-	Pearl Braided, cotton b 17@18c	Drawers, Money— Tucker's Pat. Alarm Till No. 1, \$\pi\$ doz. \$18; No. 2, \$15: No. 3, \$12; No. 4, \$18.	ı
Columbia	Massachusetts, White	Drawing Knives-	8
Columbia	Cable Laid Pussia. 1b. 12% 613c Cable Laid Pussia. 1b. 13% 614c India Hemp, Braided. 1b. 146 15c India Hemp, Twisted. 1b. 106 12c Pearl Braided, cotton. \$\mathbf{v}\$ 1 76 184 Massachusetts, White \$\mathbf{v}\$ 176 184 Massachusetts, Dab. \$\mathbf{v}\$ 1 87 184 Gasawan Mills Cable Laid Italian. \$\mathbf{v}\$ 1 187 Cable	See Knives. Drawing. Drills and Drill Stocks— Common Blacksmiths' Drill, each	ı
American Tool Chest Co.: Boys' Chests, with Tools	Braided, Giant, White # 204	Common Blacksmiths' Drill, each	
Gentlemens' Chests, with Tools30% Farmers', Carpenters', etc., Chests,	Cable Laid Italian	Blacksmiths' Self-feedingeach	
Machinists' and Pipe Fitters' Chests,	Cable Laid Russian 14¢ Cable Laid India 12¢ Braided India 18¢	Breast, Millers Falls, each \$3.00 .15&10	
Empty 50% C. E. Jennings & Co.'s Machinists' Tool Chests 30%	THOUGHTA, WHILE	Breast, Millers Falls, each \$3.75@4.00 Breast, P., S. & W	1
Chisels-	Braided, Drab Cotton 9 8246 Braided, Italian Hemp 9 8 3246 Braided, Linen 9 8 495 hraided, White Cotton, Spot. 9 2856	3 3 3 3 3 3 3 3 3 3	
Socket Framing and Firmer Standard List70&5@7/&10%	Braided, Linen \$ 3 494	Ratchet, Curtis & Curtis	
Buck Bros	Silver Lake:	Ratchet, Weston's	
Buck Bros. 30% Charles Buck Co. Socket Firmer No. 10. 60k105 C. E. Jennings & Co. Socket Framing No. 15. 60k105 Swan's 70k56	A quality, White, 35¢	Whitney's Hand Drill, No. 1, \$10.00; Adjustable, No. 10, \$12.003314	
C. E. Jennings & Co. Socket Framing	B quality, White, 800	Standard List	.1'
No. 15	Italian memp, sor		611
LaLJ. White	Wire, Picture—	Drill Bits or Bit Stoci	
Lall White	Linen, 57-54. 158 Linen, 57-54. 158 Wire, Picture— 158 Braided or Twisted 85@85&105 Note.—There is a good dead of confusion	Standard List	
Lal J. White	Wire, Picture- Braided or Twisted 85@85&108	See Pans, Dripping,	
Lal J. White	Corn Knives and Cutters	See Pans, Dripping. Drivers, Screw-	
L & L J. White	Corn Knives and Cutters —See Knives, Corn, Corn Planters —See Planters	See Pans, Dripping. Drivers, Screw-	
L. & I. J. White	need list. Corn Knives and Cutters —See Knives, Corn, Corn Planters— See Planters, Corn— Crackers, Nut—	See Pans, Dripping. Drivers, Screw-	
L & L J. White	nee list. Corn Knives and Cutters —see Knives, Corn, Corn Planters— See Planters, Corn— Crackers, Nut— Little Glant,	See Pans, Dripping. Drivers, Screw-	
L & L J. White	nese itst. Corn Knives and Cutters —see Knives, Corn. Corn Planters— See Planters, Corn. Crackers, Nut— Little Glant. Cradies— Grain. Grayons—	See Pans, Dripping. Drivers, Screw- Screw Driver Bitsper doz. \$56,70 Balsey's Screw Holder and Driver, \$\frac{1}{2}\$ do Buck Bros\$30 Buck Bros\$30 Buck Bros' Screw Driver Bits\$30 Champlon\$40.10 Fray's Hol. H'dle Sets, No. 8, \$12.00 Gav's Double Action Ratchet.	
L & L J. White	nese itst. Corn Knives and Cutters —see Knives, Corn. Corn Planters— See Planters, Corn. Crackers, Nut— Little Glant. Cradies— Grain. Grayons—	See Pans, Dripping. Drivers, Screw- Screw Driver Bitsper doz. \$56,70 Balsey's Screw Holder and Driver, \$\frac{1}{2}\$ do Buck Bros\$30 Buck Bros\$30 Buck Bros' Screw Driver Bits\$30 Champlon\$40.10 Fray's Hol. H'dle Sets, No. 8, \$12.00 Gav's Double Action Ratchet.	O L 医医腹腔腹膜膜
L & L J. White	nese itst. Corn Knives and Cutters —see Knives, Corn. Corn Planters— See Planters, Corn. Crackers, Nut— Little Glant. Cradies— Grain. Grayons—	See Pans, Dripping. Drivers, Screw— Screw Driver Bits per doz. 55@70 Balsey Screw Holder and Driver, # do Ty-inot, \$6; 41n., \$7.30 61n., \$9. 40. Buck Bros. Buck Bros. Buck Bros. Champion 40.210 Fray's Hol. H'dle Sets, No. 3, \$12.00 50 Gay's Double action Batchet \$3 Goodell's Automatic Maybew's Biack Handle 56 Maybew's Monarch 40&10	O L. 医医腹腔腹腔
L & L J. White	nese itst. Corn Knives and Cutters —see Knives, Corn. Corn Planters— See Planters, Corn. Crackers, Nut— Little Glant. Cradies— Grain. Grayons—	See Pans, Dripping. Drivers, Screw— Screw Driver Bits per doz. 55@70 Balsey Screw Holder and Driver, # do Ty-inot, \$6; 41n., \$7.30 61n., \$9. 40. Buck Bros. Buck Bros. Buck Bros. Champion 40.210 Fray's Hol. H'dle Sets, No. 3, \$12.00 50 Gay's Double action Batchet \$3 Goodell's Automatic Maybew's Biack Handle 56 Maybew's Monarch 40&10	O L. 医医性性性性 医皮肤
L&L J. White. 30430&56 Tanged Firmers 4045640&108 Back Bros. 304 Charles Buck 20 C. E. Jennings & Co. Nos. 101, 181, 285 L&L J. White, Tanged 20256 Cold Chisels, good quality. 1b, 116, 186 Cold Chisels, fair quality. 1b, 116, 186 Cold Chisels, fair quality. 1b, 116, 186 Cold Chisels, fair quality. 1b, 116, 186 Cold Chisels, ordinary. 1b, 86, 90 Chucks—Beach Pat., each \$8.00. 205 Reinner Patent Chucks. 405 Brill Chucks, New Model. 25 Independent Lathe Chucks. 405 Universal Lathe Chucks. 405 Face Piste Jaws. 405 Face Piste Jaws. 405 Face Piste Jaws. 405 Enandard Tool Co. Improved Drill Chuck. 456	neso list. Corn Knives and Cutters —See Knives, Corn. Corn Planters —See Planters. Corn. Crackers, Nut—Little Glant. Cradies— Grain. Crayons— White Round Crayons, gross. 5%@&c Cases, 100 gro. \$4.50, at factory. D. M. Steward Mig. Co. Metal Workers' Crayons, 38.50 Scapstone Pencils, round, flar or aquare. Rolling Mill Crayons. gr. \$2.50 Rolling Mill Crayons. gr. \$2.50 Rallroad Crayons (compo Stallroad Crayons (steps).	See Pans, Dripping. Drivers, Screw— Screw Driver Bits per doz. 55@70 Balsey Screw Holder and Driver, # do Ty-inot, \$6; 41n., \$7.30 61n., \$9. 40. Buck Bros. Buck Bros. Buck Bros. Champion 40.210 Fray's Hol. H'dle Sets, No. 3, \$12.00 50 Gay's Double action Batchet \$3 Goodell's Automatic Maybew's Biack Handle 56 Maybew's Monarch 40&10	O L. 医医腹腔腹腔
Lal J. White. 30430&56 Tanged Firmers 4.045640&108 Back Bros. 394 Charles Buck 394 C. E. Jennings & Co. Nos. 101, 181, 285 Lal J. White, Tanged 2025 Cold Chisels, good quality. 1b, 11612c Cold Chisels, fair quality. 1b, 11612c Cold Chisels, fair quality. 1b, 11612c Cold Chisels, fair quality. 1b, 11612c Cold Chisels, ordinary. 1b, 869c Chucks—Beach Pas., sech \$3.00. 305 Richner Patent Chucks. 407 Brill Chucks, Patent and Standard. 307 Drill Chucks, Patent and Standard. 307 Drill Chucks, New Model. 203 Universal Lathe Chucks. 407 Handependent Lathe Chucks. 407 Face Plate Jaws. 407 Face Plate Jaws. 407 Brandard Tool Co. 1100cc. 456 Improved Drill Chuck. 456	nese itst. Corn Knives and Cutters —See Knives, Corn. Corn Planters— See Planters, Corn— Crackers, Nut— Little Glant	See Pans, Dripping. Drivers, Screw— Screw Driver Bits per doz. 45@70 Balsey Screw Holder and Driver, # do '19-ino, #80; 41 #7.30 -61 \$9 40.11 OBuck Bros 30 Buck Bros. Screw Driver Bits 30 Champion 40.11 Douglass Mrg. Co 20030&10 Fray's Hol. H'dle Sets, No. 3, #12.00 50 Gay's Double action Batchet 38 Goodell's Automatic Gay's Double Action Batchet 36 Maybew's Black Handle 50 Maybew's Black Handle 50 Maybew's Block Handle 50 Maybew's Monarch 40&11 Now England Specialty Co 50&10 Sargent & Co. 's; Nos. 1,50,35 and 60 50&10&10 Smith & Hemenway 00 40&6 Stanley's R. & L. Co.' Handles 40&6 Stanley's R. & L. Co.' Handles 40&6	· · · · · · · · · · · · · · · · · · ·
Lal J. White	neso list. Corn Knives and Cutters —See Knives, Corn. Corn Planters —See Planters. Corn. Crackers, Nut—Little Glant. Cradies— Grain. Crayons— White Round Crayons, gross. 5%@&c Cases, 100 gro. \$4.50, at factory. D. M. Steward Mig. Co. Metal Workers' Crayons, 38.50 Scapstone Pencils, round, flar or aquare. Rolling Mill Crayons. gr. \$2.50 Rolling Mill Crayons. gr. \$2.50 Rallroad Crayons (compo Stallroad Crayons (steps).	See Pans, Dripping. Drivers, Screw— Screw Driver Bits per doz. 45@70 Balsey Screw Holder and Driver, # do '19-ino, #80; 41 #7.30 -61 \$9 40.11 OBuck Bros 30 Buck Bros. Screw Driver Bits 30 Champion 40.11 Douglass Mrg. Co 20030&10 Fray's Hol. H'dle Sets, No. 3, #12.00 50 Gay's Double action Batchet 38 Goodell's Automatic Gay's Double Action Batchet 36 Maybew's Black Handle 50 Maybew's Black Handle 50 Maybew's Block Handle 50 Maybew's Monarch 40&11 Now England Specialty Co 50&10 Sargent & Co. 's; Nos. 1,50,35 and 60 50&10&10 Smith & Hemenway 00 40&6 Stanley's R. & L. Co.' Handles 40&6 Stanley's R. & L. Co.' Handles 40&6	CANTERERENE CONTENT CO

ultivators— or Garden	Eave Trough Calvanized Territory. L. C. L. Eastern
o. 12 Medium Knives, 1847. P doz. \$3.50	Carloads Central
ar, cagle, rogers & naminon and Anchor	Egg Beaters—SeeBeaters, Egg Openers—
## Control	See Openers, Egg. Elbows and Shoes— Factory shipments
	Factory shipments
ver doz. \$10,80 13 20 18.00 serioan 30 x 30 x 30 x os. 1 2 3 4 B 5 30 x 30 x os. 1 2 3 4 B 5 30 x 30 x 30 x nebclicut 50 x 50 x 50 x 10 x 12 x 30 x 30 x 40 x 40 x 10 x 12 x 30 x 40 x<	16 Begs
erprise	
08. 11.00 \$17.00 \$19.00 \$30.00 me No. 1, \$\pi\$ doz. \$22.75	Enameled and Tinned Ware-See Wars, Hollow. Escutcheon Pins- See Pins, Escutcheon. Extractors, Lemon Juice —See Squeezers, Lemon.
os. 705 310 312 390 339 \$36.00 \$48.00 \$44.00 \$71.00 \$88.00 rling	
30&10@405	Tasteners, Blind— Zimmerman's Faucets— Cork Lined
\$15.00 \$18.00 adborn's Smoked Beef Cutter, \(\pi\) dos. \$60.00	Red Cedar
Slaw and Kraut-	Star. Metal Plug new list
law, Corn Grater, &c	Lockport, Metal Plug, reduced list60&55 Star. Metal Plug new list 40@40&55 Star. Metal Plug new list 40@40&55 West's Lock, Open and Shut Key 50&105 John Sommer's Peerless Tin Key 405 John Sommer's Poerless Tin Key 505 John Sommer's Victor Metal Key 505 John Sommer's Victor Metal Key 505 John Sommer's Dlamond Lock 405 John Sommer's Ly Cork Lined 505 John Sommer's Reliable Cork Lined 505 John Sommer's Reliable Cork Lined 506 John Sommer's Reliable Cork Lined 508 John Sommer's Reliable Cork Lined 506 John Sommer's Reliable
Tobacco-	John Soumer's Common Cork Lined. 709 John Sommer's Chicago Cork Lined. 609 John Sommer's O. K. Cork Lined. 609 John Sommer's Perfection Cedar 409 McKenna Brace.
tional, \$\psi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	John Sommer's Perfection Cedar408 McKenna, Brass: Burglar Proof, N. P
Washer—pleton's, \$40s. \$16.0050&10&10s.nney's	John Sommer's Perfection Cedar 40% McKenna, Brass: Burglar Proof, N. P
legers, Post Hole, &c.— lbey Post Hole Augerper doz., \$9,00 an's Improved Post Hole Auger40; an's Perfection Post Hole Digger	See Plates, Fellos. Files—Domestic—
an a refrection Post Hole Digger # doz. \$9.00 phler's Universal # doz. \$14.00 phler's Little Giant # d zz. \$14.00	Best Brands
an's retrection Post Hote Digger. \$9.00 hler's Universal. \$\frac{9}{3}\text{dos.} \$9.00 hler's Little Giant. \$\frac{9}{3}\text{dos.} \$314.00 hler's Hercules. \$\frac{9}{3}\text{dos.} \$312.00 hler's Horieble. \$\frac{9}{3}\text{dos.} \$312.00 hler's Rival. \$\frac{9}{3}\text{dos.} \$310.00 hler's Rival. \$\frac{9}{3}\text{dos.} \$30.00 hler's Ploneer. \$\frac{9}{3}\text{dos.} \$30.00 yer-Break Post Hole Diggers.	Second Quality80d:10@80d255 Imported— Stube' Tapers, Stube' list, July 24,
ver-Break Post Hole Diggers, \$\psi\$ dos. \$24.00	Fixtures, Grindstone-
Dog Collars—See Collars, Dog. Dogr Checks— See Checks, Door,	Inch.
See Springs, Door,	Sargent's Stowell's Giant Grindstone Hanger # dos. #6.00 Stowell's Grindstone Fixtures, Extra Heavy
Doors, Screen— orter's Plain, No. 6	Fodder Squeazers
Drawers, Money— 10ker's Pat. Alarm Till No. 1, \$\pi\$ doz. 818; No. 2, \$15: No. 3, \$12; No. 4, \$18. Drawing Knives—	See Compressors. Forks— Sept. 1, 1900, list.
See Knives. Drawing. Drills and Drill Stocks— ommon Blacksmiths' Drill, each	inches 70.00
Jacksmiths' Self-feeding each	Florks, 13 to 16 inches
\$3.75@(x) reast. Millers Falls, each \$3.00 .15&10; reast. P. S. & W	Manure, 5 and 6 tine
S 6% ohnson's Drill Points 25:10 atchet, Curtis & Curtis 25 atchet, Parker's 40	Spading
ohnson's Automate Drills Nos. 2 and hnson's Drill Points	Columbia, Hay
Twist Drills— tandard List	\$5.00; 6 tine, \$6.00. W. & C. Potato Digger
Drills—See Augers and Bits. Drill Chucks—See Chucks. Dripping Pans— See Pans, Dripping.	Acme Hay
Dalugae Sarous	W & C Favorite Wood Raries A time
2 inch, \$6; 4-in., \$7.50 f.in., \$9.40 Suck Bros	Frames—Saw— Red, Polished and Varnished, .dos. 3. 15.281.39
Crew Driver Bits per doz. \$560.70 2 19-inoh. \$6; 4-in., \$7.50 6-in., \$9.40 2 19-inoh. \$6; 4-in., \$7.50 6-in., \$9.40 Muck Bros' Sorew Driver Bits	White
faybew's Monarch	Good #1 25 1.40 1.70 2.15 2.75 3.75
New England Specialty Co50&10 sargent & Co.'s; Nos. 1,50,55 and 6050&10&10 Nos. 20 and 40684&10	Fair, \$1.00 1.10 130 1.75 2.30 4.86 Fruit and Jelly Presses. See Presses, Fruit and Jelly.
mith & Hemenway Co	See Presses, Fruit and Jelly. Fry Pans—See Pans, Fry. Fuse————————————————————————————————————
Swan's: Nos. 65 to 68	Fair. \$1.00 1.10 1.30 1.75 2.50 1.56 Fruit and Jelly Presses— See Presses, Fruit and Jelly. Fry Pans—See Pans, Fry. Fuse————————————————————————————————————
Aust 20, 00 mad 40	Taribio Indiana y monthly many

August 20, 1002			93
Gates, Molasses and Oil -	Barn Door, New England Pattern, Check Back, Regular:	Hinges only\$1.70 1.49 2.00 Latches only	Coat and Hat, Stowell's
Cauges- Marking, Mortise, &c	Inch	New England: With Latch doz @\$1.55	Coat and Hat, Wrightsville652108 Harness, Reading List702102756
55 A 10 G0 55 A 10 C 10 B	Chicago Spring Butt Co.: Friction	Reversible Self-Clasima:	Belt
Barrett's Comb. Roller Gauge	Oscillating	With Latch	Atlas Coat and Hat:
Wire Brown & Sharpe's		Western: With Latchdoz. \$1.40@1.75	Single Cases. 454 10 Case Lots. 454105 Czar Harness. 5021025 Wire Coat and Hat:
Wire P., S. & W. Co30@30&10%	Elevator. 405 Elevator. 405 Ratiroad. 505 Cronk H. inger Co.; 1 0089 Axile. 605 Roller Beaving. 60&103	Without Latch doz. \$0.95@1.90	Wire Coat and Hat:
Cimiets— Single Cut— Nail, Metal, Assorted.gro.\$1.40@1.80 Spike, Metal, Assorted.gro.\$2.80@3.25	l oose Axie	Wrightsvi e H'dware Co.: Shepard's or Clark's, doz. sets, No. 1 2 3 Hinges orly Latches\$'.30 2.00 2.77	Acme. 605 B. B. 605 V. Brace, Chief and Czar. 605
Spike, Metal, Assorted gro. \$2.80@3.25	Desley Delt Possing 04.00	Hinges with Latches. \$1.50 2.00 2.75 Hinges only. 1.20 1.50 2.00 Latches only.	Gem. Bright Wire Goods—See Wire.
Nail, Wood Handled, Assorted, gro. \$1.75@2.00 Spike, Wood Handled, Assorted	Parlor, Standard#3.201	Spring Hinges	W FOURTE IFON-
910.30 2003	Barn Door, Standard60&10%	Spring Hinges— Holdback, Cast Iron, gro \$7.00@7.25 Non-Holdback, Cast Iron	Box. 6 in , per doz. \$1.50; 8 in., \$1.75; 10 in., \$2.00.
Glass, American Window Jobbers' List, Jan. 21, 1901	Special	7 Pandelon gro, \$6.50@6.75	Cotton doz. \$1.05@1.18 Wrought Staples, Hooks, &c.— See Wrought Goods.
Less than Carloads80&20%	Cleveland	Bardsley's Patent Checking15%	
Carloads	New York 60%	Bommer Ball Bearing Floor Hinges	Bush, Light, doz. \$5.50; Medium, \$6.00; Heavy, \$5.50 GrassNos. 1
6000 Boxes	Pe-rless	Bommer Spring Hinges40x 2	Best
371/4@50%	Sterling Mfg. Co.: 605 McKinney Mfg. Co.: 608 No. 1. Special, \$15		Common \$1.30 1.30 1.40 1.60 Potato and Manure
List B, Cans (1/2 pis., pts., qts.) 33/5@48%	No. 2, Standard, \$18	Garden City Engine House. 255 Keene's Saloon Door. 255 Triple End. 505	Best
23/40/48% List C, Cans (1/4 gal., gal.) 25/40/48% International Glue Co. (Martin's) 40/410/25/8	Badeen Bown Door	Hoffman Hinge & Foundry Co.	Malleable from 70058279419
Glue Pots-See Pots, Glue.	Baggage Car Door	Lawson Mfg. Co.: Ma'chl ss	Brass
Circase, Axie- Common Gradegro. \$5.00@6.00 Dixon's Everlasting10-b pails, ca. 85¢ Dixon's Everlasting, in bxs. \$7 doz. 1 b 81.20: 2 b \$2.00	Elevator		Crown Picture
Dixon's Everlasting10-20 pails, ea. 85#	Interstate	Oblique 50&10\$ =	Corn Hooks—See Knives, Corn. Horse Nails—See Nails, Horse
Snow Flake: \$1.20: 3 b \$2.00	Matchless		Horse Nails—See Nails, Herw Horseshoes— See Shoes, Horse.
1 qt. cansper doz. \$2.00; 2 qt., \$3.30; } 1 gal. cans per doz. \$6.00; 8 gal. \$2 \$16.00; 5 gal. \$24.00	Railroad	Ideal, No. 4	Hose, Rubber-
Grindstones-	Steel, Nos. 300, 404, 50040&15%	Columbian Hdw. Co.:	Garden Hose, 4-inch: Competitionft. 440 450 3-ply Standardft. 5
Grindstones— Bicycle Grindstones, each\$2.50@3.00 Pike Mfg. Co:	Wild West, Nos. 309, 404, 500596	Acme, Brass	3-ply Standard ft. 5 @ 6 4-ply Standard ft. 8 @ 9 5-ply extra ft. 9 @ 19
Improved Family Grindstores, per inch, per doz \$2.00 33%	Taylor & Boggis Foundry Co.: Kidder's	Columbia, No. 14 P gr. 39.00 K	A-Diy extra
Pike Mower Kuife and Tool Grinder, each	American Trackless, 33342195	Columbia, Adjustable30%	Cotton Garden, Win., counled:
Iron Frames each, \$3.25	Landy Farior Door.	Ideal, No. 4 \$12.55 \$12.	Low Grade
Guards, Snow- Cleveland Wire Spring Co.:	Cycle Ball Bearing		From 1 to 10
Galv. Steel ₩ 1000	Over hall bearing 604/95 Ives, Wood Track 604/95 L.T. Roller Bearing 604/104/95 New Era Roller Bearing 504/104/95 O. K. Roller Bearing 604/104/95	15. 1901: Light Strap Hinges	From 4 to 10
Gun Powder-See Powder.	New Era Roller Bearing50&10% O. K. Roller Bearing60&10&5%	Heavy Strap Hinges 70%	Chinese Laundrylb. 5@54 Chinese Sadlb. 34@34
Hack Saws—See Saws.	O. A. Roller Bearing	Heavy T Hinges 66% Extra Heavy T Hinges	Mrs. Potts', per set; Nos. 50 55 60 65
Peg Patent, Leather Top. \$4.90@5.25	Spenger Roller Bearing60&105	Hinge Hasps	67@72c 64@69c 77@82c 74@79c New England Pressing.lb 314@594
Peg Patent, Plain Top\$3.50@3.75 Sewing, Brass Ferrule\$1.50@1.60	Underwriters' Boller Bearing 40% Wilcox Auditorium Ball Bearing 20%	Cor. Ex. Heavy T75d 104	Soldering Coppers, 1 & 116 lb , 21 @
Saddlers', Brass Ferrule. \$1.85@1.45 Peg, Common\$1.85@1.85	Wilcox Barn Trolley No. 12340% Wilcox Fire Trolley, Roller	Cor. Heavy Strap 505 Cor. Ex. Heavy T 756205 Core Ex. Heavy T 756205 Screw Hook 1b. 3 c and Strap. 10 to 20 in 1b. 3 c	Soldering Coppers, 1 & 1/6 lb , 21 & 25c., 2 lb., 19 & 25c., 2 lb., 19 & 25c., 2 lb., 19 & 25c., 2 lb., 2 lb
Brad. Common\$1.50@1.75 Halters and Ties-	Wilcox Fire Trolley, Roller Wilcox Fire Trolley, Roller Bearing, 305 Wilcox Le Roy Noiseless Ball Bearing, 405 Wilcox New Century, 508:108:105	Screw Hook and Eue:	Pinking-
Covert Mfg. Co.:	Wilcox New Century50&10&10%	% to 1 inch	Pinking Ironsdoz. 50@666
Web	Harness Menders—See	Miscellane us-	Jack Screws-See Screws, Jacks, Wagon-
Covert's Saddlery Works: Web and Leather Halters709	Menders. Harness Snaps—See Snaps.	Hoffman's Steel Spring Butt Hinges	Covert Mfg. Co., Steel
Web and Leather Haiters	Hasps-	Hoffman's Offset Refrigerator Hinges	Daisy
Sissi Hope Livering Co	I M Longue vrushe, orabies, occ.—300	Hods, Coal-	Lane soleet
Hammers- Handled Hammers-	Wrought Goods. Hatchets	Galv. Open \$3.70 3.00 3.30 5 60 % dox. Jap. Open \$3.10 3.40 2.70 5.00 % dox. Galv. Fun'el. \$3.30 5.60 3.90 4 20 % dox.	Mettles— Brass, Spun, Plain
Heller's Machinists'50@50&50 Heller's Farriers50@50&50 Magnetic Tack, Nos. 1, 2, 3, \$1.25, \$1.50	Best Brands	Galv. Fun'el.\$3.30 5.60 3.90 4.20 @ doz. Jap. Funnel.\$2.70 3 60 3.30 3.60 @ doz.	Enameled and Cast Iron—See War
### Magnetic Tack, Nos. 1, 2, 8, \$1.45, \$1.50, \$1.75	Note.—Net prices aften made. Hay and Straw Knives—	Jap. Funnel. \$2.70 3 00 3.37 3.00 % doz. Hoes Eye — Scovil and Oval Pattern,	Knife Sharpeners - See Sharpeners, Knife.
Favette R. Plumb:	Soo Knines	Grub, list Feb. 23, 1899, 70&5@70&108	Knives-
Flumb, A. E. Nail40&10&7\&1 Engineers' and B. S. Hand. d0&10&2\&1 Machinists' Hammers	Hinges— Blind and Shutter Hinges—	Handled-	Poster Prog ! Butcher &c
Engineers' and S. S. Hand. do210a24; Machinists' Hammers	Surface Gravity Locking Blind:	Sept. 1, 1900, List: Field and Garden	The state of the s
Heavy Hammers and Sledges—	(Victor; National; 1853 O P; Niagara; Clark s O. P.; Clark s Tip; Buffalo.)	Field and Garden	
		Street and Mortar 75&716&23	Withington Acme, W doz., \$2.65: Dent.
\$ to 5 lblb. 36c \ 80&10@80 Over 5 lblb. 30c \ &10&50 Wilkinson's Smiths'9\4c@10c lb	No	Cotton	rated, \$2.10; Yankee No. 1, \$1.50; Yankee No. 2, \$1.15.
Handcuffs and Leg Irons	(L. & P., O. S., Dixie, &c.) No	Wee:ling	Standard List 70&5@70&1
Set Police Goods Handles—	No 1 1½ 2 3½ Doz. pair\$0.60 55 52 .45 Mortise Reversible Shutter, (Buffalo,	Pt. Madison Crucible Garden Hoe	Adjustable Handle
Agricultural Tool Handles	No 1 11/6 2	Ft. Madison Crescent Cultivator Hoe.	C. E. Jennings & Co. Nos. 45, 46. 4041
Axe, Pick, &c	Doz. pair\$0.65 .60 .55 North's Automatic Blind Fixtures, No.	Pt. Madison Mattock Hoes: Regular Weight 9 doz \$4.50	Swan's70&10&3
Cross-Cut Saw Handles-	No	Regular Weight	Swan's Watrous L & I. J. White 200552 Hay and Straw Lightning Pat n. per dox \$6.5504. Iwan's Sickle Edge. \$6.504. Iwan's Serrated \$6.504. Maine \$6.504. Maine \$6.504.
Cross-Cut Saw Handles- Atkins' 40&5 Champion 45@45&10	Reading's Gravity	Ft. Madison Dixle Tobacco Hoe75&201 Kretsinger's Out Easy, per doz75&20	Lightning Pat nper doz. \$6.2506.
Mechanics' Tool Handles-	The trade Oteral Consider Dilad Office	I W. & C. Ivannoe	Iwan's Serrated
Mechanics' Tooi Handles- Auger, assortedgro. \$2.50@82.5 Brad Avelgro. \$1.25@\$1.5	brancy's steel Gravity Sind Hinges, with screws, \$1.15. with screws, \$1.15. wrightsville H dware Co.: 0, 8, Luli & Forter	Acme Weeding	Mincing-
Chisel Handles: Apple Tanged Firmer, gro. ass'd.	Wrightsville H'dware Co.: O. S. Lull & Porter	Hog Rings and Ringers-	Miscellaneous-
#2.25@#2.35; large, #2.50@#2.86 Hickory Tanged Firmer, gro. ass'd	Stangar's Positive Locking Nos 1 &	And and more A seriogora.	Wostenholm's 9 dcz. \$3.00@3.
Apple Tanged Firmer, gro. ass'd. \$3.25@\$\$ 25; large, \$2.50@\$\$.60 Hickory Tanged Firmer, gro. ass'd. \$1.75@\$\$.20; large, \$5.50@\$\$.70 Apple Socket Firmer, gro. ass'd.	3 Shepard's Notseless, Nos. 60, 65, 55. 70&10%	Hoisting Apparatus- See Machines, Hoisting.	Base, 24-inch. Birch, or Maple,
Hickory Socket Firmer, and and	Niagara, Gravity Locking, Nos. 1, 3 &	See Ware, Houoto.	
Dielevy Socket Framing	1968, Old Pat'n, Nos, 1, 1 & 575&7165	Holders- DIC- Angular, # doz. \$24.00 45&10;	Door, Mineraldos. 60 68 Door, Por. Jap'ddos. 65 67
\$2.50@\$2.75; large, \$2.65@\$2. File, assortedgro. \$1.00@\$1. Hammer, Hatchet, Aze, &c	Buffalo Gravity Locking, Nos. 1, 3 &	Empire 500	Door, Por. Nickeldoz. \$2.00@1.
	Shepard's Double Locking, Nos. 20	C. E Jennings & Co. Model Fool Hold-	Ladders, Step-
Not Varnished	Champion Gravity i ocking, No. 75	ers33\4;	
Jack, doz.25c; Jack Bolted55@66 Fore, doz. 35@38c; Fore, Bolted	Steamboat Gravity Locking, No. 10	Hooks- Cast Iron-	Feet. Feet. Use. Per doz. Per de
70@7	Piouser, Nos. 080, 45 & 5)4	Bird Cage, Sargent's List50&10@60 Celling, Sargent's List50&10@60	Length Length Ready for Feet. Feet. Use Per doz. Per doz. 19.00 114.
Barn Door, New Pattern, Rown	d Gate Hinges—	Nienoison File Holders and File Handles	815 34.00, 20.0
Groove, Regular:	Clark's or Shenard's - Doz. sets:	Chather I has Commontly I let 500 148/\$10	10
Dox\$0.85 1.90 1.50 1.90 \$	Hinges with Latches, \$1.86 1.90 2.68	Coat and Hat, Sargent's List45&10 Clothes Line. Stowen's	12 29 51.00 46.0

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			200 20, 1001
Ladies- Melting-	Horse-	Red Rope Roofing, 250 sq. feet per	Davis Iron, Machinist Nos. 1 to 14905.
B. B. & W	Nos. 6 7 8 9 10 A. C		
Mending.	Ausable 28c 28c 25c 24c 28c. 50&10\$	Tarred Paper. 1 ply (roll 300 sq.ft.), ton\$36.00@27.00	Davis Iron, Adjustable Nos, 6 to 49355 Disaton's
Bargent's40@40&10%	C. B. K 25¢ 28¢ 29¢ 21¢ 21¢40\$	2 ply, roll 108 sq. ft	70&10@70&10&10¢
Lanterns Tubular	Champl'in28¢ 26¢ 25¢ 24¢ 23¢	\$ ply,roll 108 sq. ft	Woods' Extension
Mide Lift Tubular doz. S4.75(a)5.25	214 704 704 744***		
Other Styles	Maud S	110 sq. ft.)\$2.75	Buffalo Steam Egg Poachers, \$\Phi\$ dos., No. 1, \$7.20; No. 2, \$11.00 No. 3, \$11.00; No. 4, \$14.50
Buil's Eye Police-	mand S. 200 236 229 216 216 505 Neponset. 232 216 206 196 186 405 Putnam . 236 216 206 196 186 33/45 Vulcan . 236 216 206 196 186 258-105 American. Nos. 5 to 10 \$\pi\$ 50 96 956 Jobbers' special brands per lb. 8@9 c	Sand and Emery— List Dec. 23, 189950&10@50&10&10\$	\$11.00; No. 4, \$14.50.
Mo. 1. 9% 4nch	Vulcan 23# 21# 20# 19# 18# 25&105	Parers- Apple-	Points, Claziers'-
No. 8, 3 inch	Jobbers' special brands per Ih. 8@9c	Advance	Points, Claziers'- Bulk and 1 lb. papers lb. 8 @ 8140
Boggin's Latchesdox. 30@330	Picture	Bonanza each \$5.00	
See Mowers, Lawn.	Brass Head45 .60 .70 .95 1,00 gro.	Dandyeach \$7.50	Pokes, Animal-
Landara Cattle-	For. Heud , 1.10 1.10 1.10 aro.	Baldwin. \$\psi \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	14-10. papers. 15. 84 6 84 6 84 6 Pokes, Animal— Ft. Madison Hawkeye. P doz. \$3.25 Ft. Madison, Western. P doz. \$3.75
Small doz. 50c; large, \$5c Gevert Mfg. Co	NIDDOFS. See Piers and Ninners.	Hudson's Rocking fable dos \$5.50	Police Goods-
Lemon Squeezers	Nut Crackers- See Crackers, Nut.	Improved Bay State & doz. \$27.00@30.00 New Lightning \$2.50	Manufacturers' Lists25@25&5% Tower's25%
Lemon Squeezers-	Cold Punched Off	Keading 79 doz. \$4.00	Polish-Metal-
Lifters, Transom—	Mirs, or U. S. Standard, 118t.	Turn Table '98	Prestoline Liquid, No. 1 (14 pt.), W doz.
H & E	Heragon plain	White Mountain # dos. #4.00	Prestoline Paste
Lines- Wire Clothes, Nos 18 19 20	Square, plain	Saratoga \$\pi\$ dos. \$5.50 White Mountain \$\pi\$ dos. \$4.50	Prestoline Liquid, No. 1 (14 pt.), \$\psi\$ doz. \$\psi\$, 00; No. \$\psi\$ (1 qt.), \$\psi\$, 9, 72
Wire Clothes, Nos 18 19 20 20 1.65 75 feet	Hot Pressed:		doz. 50¢; \$ gr. \$4.50; 1/2 to boxes, \$1
Omewan Mills.	Hot Pressed : Mfrs. U. S. or Narrow Gauge Standard. \$5.30	Pigeons - Clay Markle's Black Birds, f.o.b. factory,	U. S. Liquid, 8 oz. cans, \$\pi \doz. \$1.25;
Orown Solid Braided Chalk	Hexagon Blank	per M	Barkeepers' Friend Metal Polish, # dos.
Samson Cordage Works:	Hexagon Tapped	Picks and Mattocks-	\$1.75; \(\pi \) gr. \$18.00, Wynn's White Silk, \(\pi \) pt. cans, \(\pi \)
** No. 0 to 0.5 ** ** amson Cordage Works; ** 80lid Braided Chalk, vo. 0 to 8 40; ** 1. 48.50; No. 2, \$7.00; No. 3, \$7.50 No. 1, \$8.50; No. 2, \$7.00; No. 3, \$7.50		List Feb. \$3, 189970&10@70&10&5%	dos\$2.00
No. 1, \$6.50; No. 2, \$7.00; No. 3, \$7.50	Oakum-	Pinking Irons-	Black Eagle Benzine Paste, 5 b cans
Locks Cabinet Locks 351/6331/6271/5	Best or Governmentlb. 614c	See Irons, Pinking.	Plack Fords Liquid 14 pt gons
Cabinet Locks33%@33%@7%3	Navylb. 5 c	Pins- Escutcheon-	Pinck Eagle, Liquid, 29 pt. cans
Door Locks, Latches, &c Diet prices are very often made on	U. S. Navy	Brass	Ladd's Black Beauty, gr. \$10.00
	In carload lots \(\)c lb, off f.o.b. New York.	Pipe, Cast Iron Soll-	Joseph Dixon's, # gr. \$5.75
R. & E. Mfg. Co	Oil, Axie-	Factory Shipments—Carload lots.	Fireside
Bading Hardware Co	Snow Flake:	Standard, 2-6 in	Japanese
	Snow Flake :	Fittings 75& 1035% Note.—Freight allowed on Carload lots.	Black Eagle, Liquid, ½ pt. cans
	1 gal. cans, per doz		Www.ster
Frought Iron,	Oll Tanks-See Tanks, Oil.	Pipe, Merchant, Boiler	Wynn's: Black Silk, 5 b pall.,each 70¢
Sasn, oc	Brass and Copper 104102504	Less than Carloads to Consumers.	Black Silk, 5 or box # doz. \$1.00
Frenze and Prass 66266	Tin or Steel	Merchant Pipe. Galva-	Winn's Black Silk, 5 % pail. each 70g
bronze and Brass	Zinc	Black, nized	Poppers, Corn- Round or Square:
Bronze and Brass65%	Brass and Copper40&10%	14 to 16 inch	1 qt gro. \$6.50@\$7.00
Wrought Bronze and Brass55&5%	Tin or Steel	Rtesi 90 Feet	1½ qtgro. 9 50@ 10.00 2 qtgro. 10.50@ 11.00
Fronze and Brass	Malleable, Hammers' Improved, No. 1.	1 to 134 inch and 234 to 5 inch in-	Post Hole and Tree Au- gers and Diggers—
Booding	Malleable, Hammers' Old Pattern.	s to signate, inclusive	See also Diggers, Post Hole, &c.
Machines Boring - Without Augers.	Zinc	6 to 10 inches	Potato Parers-
II-wight America	k oad Otlers etc	1 to 11/2 inch and 21/2 in 4316%	See Parers, Potato.
proved No. 8\$4.25 No. 1 \$5.00 proved No. 4 8.75 No. 9. 8.88	Openers-Can-	1% to 3% inch	Pots- Glue-
aproved No. 4 8.75 aproved No. 5 2.75 aprings 2.50 square Falls 2.50 after Falls 2.50 and 8.75 and 8.75	French	Casing, Cut Lengths. B. & S. & S. & S. & S.	Powder-
filers Falls 5.75	Iron Handledoz. 25@27c	84 to 4 toch	
Swan's, No. 500 5.10 No. 200 6.45	Sprague, Iron Hdle. per doz. 35@40c Sardine Scissorsdoz. 31.75@\$3.00	5½ tol inch 55% by to 18½ inch 61½5. Note.—Prices are largely nominal ow- ing to scarcity of Pipe and varying quo-	Duck, 1 lb. each 45c Fine Sporting, 1 lb. each 75c Rifle, 3-lb. each 15c Rifle, 1-lb. each 25c
Hoisting-	Tip Topper doz. \$0.75	ing to searcity of Pipe and varying quo-	Rifle, 1/4-lb. each
Moore's Anti-Friction Differential Pullay Block	Stowell'sper doz. 35@45¢	Pipe, Sewer-	Rifle, 1-lb. each
Moore's Hand Hoist, with Lock Brake, 20% Moore's Portable Pneumatic Hoist	Waldorf, # gro	Standard Pipe and Fittings, 2 to 24 in.	Duck, 6%-lb, keas
ice Cutting_	Nickei Plateper doz., \$2.25	New England 70d	Duck, 12½-lb. kegs. \$4.25 Duck, 26-lb kegs. \$5.00
Washing-	Packing-	New York and New Jersey73% Ohio and Michigan8%	Rifle, 634-10 kegs\$1.25
Wayne American	Asbestos Packing, Wick and Rope,	Carload lots are generally deliv-	Rifle, 12%-10. Kegs
Tarse American	16%@18e lb.	Planes and Plane Irons	King's Semi-Smokeless:
Mallets-	Rubber- Sheet, C. I8@195	Planes and Plane Irons- Wood Planes-	Half Keg (12½ h bulk)
Mekory	Sheet, C. O. S 9@ 180	Molding	Case 24 (1 b cans bulk)
Namers', Hickory and Applewood,	Sheet, C. B. S	45.42.10@1.5.42.10.45.4	Rifte, 12%-lb. kegs. \$2.25 Rifte, 25-lb. kegs. \$4.00 King's Beunl-Snokeless. \$4.00 Keg (19 b bulk). \$4.50 Larter Keg (194 b bulk). \$1.50 Charter Keg (194 bulk). \$1.50 Charter Keg (194 bulk). \$1.50 Half case (1 b cans bulk). \$1.50 King's Smokeless: Shot Gun sitte
der	Sheet. Red	Bench, Second quality	Keg (25 b bulk) \$12 00 \$15.00
Mats- Door-	Jenkins' Standard, P 180425@25&5% Miscellaneous—	Balley's (Stanley R. & L. Co) 50&10@50&10&5%	Half case 12 (1 b cans bulk)
Mastic Steel (W.G. Co.)	American Packing	Gage Seit Secting	Half case 12 (1 B cans blk)7.25 8 75
Mattocks-	Cotton Facking	Balley's (Stanley H. & L. Co)	Fruit and Jelly-
Meat Cutters-	Italian Packing	Balley's (Stanley R. & L. Co)	Pressos—Fruit and Jelly— Enterprise Mg. Co. 200255 Pruning Hooks and Shears—See Shears. Pullers Nell-
See Cutters, Meat.	Russia Packing	Missellansons Planes (Stanlag P. & I	Shears-See Shears
Mills- Coffee-	8. 8. & Oo., with gauges No 1 \$6,50; No. 2, \$5,75 \times dox.	Co.)	Pullers, Nail-
See Cutters, Meat. Milk Cans. See Cans, Muk Mills — Coffee — Berprise Mg. Co	Galvanized-	Wood Bench Flane Irons	Cyclops
Farker's Columbia and Victors	Price per gro.	300560030A10Asd	Olant, No. 1, \$\Phi\$ doz. \$18; No. 2, \$16.50
Terker's Box and Side50&10@60%	Quart	Buck Bros	No. 8, \$15 405
Mincing Knives-			
Molasses Cates	Well \$7.00 \$9.00 \$1.00	Kohler's Eclipse doz. \$9.00	Pelican # doz. \$9.00
See Gates, Molasses.	#ell	Fellos B Signs	No. 1 (large), \$\Phi\$ doz. \$5.50; No. 2 (large), \$5.75; No 3 (small), \$5.90; No. 2-B (large), \$5.50; No. 3-B (small), \$4.00; No. 2-D (large), \$4.50; No. 3-D (small) \$4.00.
See Drawers, Money.	Common Lipped:	Felloe	\$5,50; No. 8-B (small), \$*.00; No. 2-D (large), \$4 50; No. 8-D (small) \$4 00.
Mowers, Lawn- set prices are generally quoted.	1 No.	Pilers and Nippers-	Pullevs-Single Wheel-
Cheap	Per doz. \$0.00 .75 .85 .95 1.15	Button Piters	Awning doz. \$0.45 .70 .95
Good all sizes, \$2.50@ 2.75	Regal, S. S. & Co., \$\psi\$ doz., Nos. 5,\$4.50;	Gas Burner, per doz., 5 in., \$1.15@ \$1.20: 6 in., \$1.35@\$1.45	Hay Fork, Swivelor Solid Eye
High Grade 4.25 4.50 4.75 5.00	No. 3 5 4 5 95 1.15 Per doz. \$0.90 .75 .85 .95 1.15 Roasting and Baking— Regal. S. & Co., \$4 dos., Nos. 5,\$4.50; 10 \$5.00; 20 \$5.50; 30,\$5.00; 10 \$5.00; 20 \$5.50; 30,\$5.00; 834.52; 60 \$39.00; 140, \$38.00; 150, 837.50; 180 \$4.90;	Gas Pipe 7 8 10 12-in. \$1.75 \$3.00 \$2.75 \$3.75	
Continental	\$34.59; 60 \$39 00; 140, \$38.00; 150, \$37.50; 160, \$43.00.	Aeme Nippers	Hot House.doz \$0.65 .90 1.20
Great American Ball Bearing. 60&10&5%	Paper-	Bernard's:	Screwdoz. \$0.15 .20 .25 .30
70&5%	Asbestos: Ib.	Paragon Pilers 50&55	Inch 134 2 214 214 Side doz 20 20 20 25 60
Proposition 2.50 4.50 4.70 5.00	Building Felt	Elm City Fence Pliers	Hot House.doz \$0.55 .00 1.20
Panasylvania Pons	Mill Board, sheet, 40 x 40 inches4c Mill Board, roll, thicker than 1-16		Tackledoz. \$0.30 .45 .65 1.10
Btyles M., S., C., K., T	inch	American Button	Calling or End Anti-Frietten and
Myle E. Low Wheel 60&10%	Mill Board, roll, 1-16 in, thick and less3c	Improved Button 70±105 Stub's Pattern 506 Combination and others 251 Heller's Farriers' Nippers, Pincers and Tools 50:350±50 P. S. & W. Tinners' Cutting Nippers, 30:30±02-103 Swedish Side. End and Discount	Ceiling or End, Anti-Friction 605 Dunb Waiter, Auti-Friction 606 105 Hay Fork, Anti-Fricton, 5-in. Wheel.
Drexel and Gold Coin, low list 50255	Roein Sixed Sheathing: FM as at	Heller's Farriers' Nippers, Pincers.	# doz. #12.00
N	Light set . 20 lbs. to roll	P. S. & W. Tinners' Outling Nippers.	Sash Pulleys
Nalls- stand Wire. See Trade Report.	Medium wt., 30 lbs. to roll\$0.47 Heavy wt ,40 lbs. to roll\$0.58		Common Frame; Sauare or Round End per doz., 14 in., 14c.; 2 in., 17c
Wire Naile and Brads, Papered.	Medium Grades Water Front	Utica Drop Forge & Tool Co	Auger Mortise, no Face Plate, per
But July 20, 1899	Sheathing	I Pliers and Nippers, all kinds 404	dog 186 in 150 . 8 in 180
ers', &c. See Tacks.	to lb., ton	Plumbs and Levels-	Auger Mortise, with Face Plate, per doz., 134 in , 16c.; 2 in., 19c.
		9,1-2,10%	

August 29, 1901	THE IRC
Acme	17 in. per doz\$2,85 @\$1.50
2 10., 204.	17 in. per doz
Fox-All-Steel, Nos. 3 and 7, 2½ in	Steel
Extra for Anti-Friction Bronze Bushing	Steel
ideal No. 18	Hill's Ringers, Gray Iron.doz, 55@60c
Extra for Anti-Friction Brouze Bushing. # doz 10¢ Grand Rapids All Steel Noiseless. 405 Grand Rapids All Steel Noiseless. 10¢ Grand Rapids All Steel Noiseless. 10¢ Niagara. 15¢ in. 16¢; 2 in. 19¢ No. 26, Troy. 13¢ in. 16¢; 2 in. 16¢ Star. 13¢ in. 16¢; 2 in., 10¢ Tackle Blocks- See Blocks.	75@80c
	Blair's Ringersper gro. \$5.75\(\phi\)6.00 Blair's Ringersper doz. \$0.65\(\phi\).70
Cistern	Brown's Ringsper gro. \$6,00@6.25 Brown's Ringersper doz. \$1.00@1.10
	Rapid Rings
	Iron or Steel:
Inch. 3 314 514 334 4 4 31.30 3.60 3.85 4.10 4.40 Barnes Dbl. Acting (low list)	Tinners'
Flint & Walling's Pitcher Spout75%	Miscellaneous
Barnes Dbl. Acting (low list) 504 Filnt & Walling's Fast Mail (low list).905 Filnt & Walling's Fast Mail (low list).905 Filnt & Walling's Flother Spout	_Baking.
Punches— Revolving (4 tubes)doz. \$3.75@4.25	Rollers— Acme, Stowell's Anti-Friction50% Barn Door, Sargent's list50&10&10%
Saddlers' or Drive, gooddoz. 68@700 Spring, single tube, good quality	Farn Door, Sargent's list 50&10&10% Cronk's Stay
31.65@174	Lane's Stay
Bemis & Call Co.'s Cast Steel Drive50% Bemis & Call Co.'s Check55% Bemis & Call Co.'s Spring50% Niazara Hollow Punohes40%	Manila, 7-16 in. and larger
Hemis & Call to "spiring" 405 Niagara Hollow Punches 56&10 Niagara Solid Punches 56&10 Steel Screw, B & K. Mfg. Co. 405 Tinners' Hollow, P., S. & W. Co. 405 35@35&55	Manila%-inch
Tinners' Hollow, P., S. & W. Co. 35@35&5% Tinners' Solid, P., S. & W.Co., # doz., 60%	10 threat
	Manila Hay Rope. Medium
Rail— Barn Door, &c.— Barn Door, Light. 1/4	5isal
B. D., for N. E. Hangers: Small. Med. Large.	Cusal, Hay Kope. # to 10
100 feet\$2 20 2.70 3.20 Sliding Door, Brazed Wr't Iron, ft.64c	plylb. 7 @ 7¼c Sisal, Turred, Medium Lath Yarnlb. 6½@ 6¾c Cotton Rope:
Sliding Door, Wrought Brass, 1%	Cotton Rope: Best4-in, and larger lb. 14 c Medium4-in, and larger lb. 11/4c
in	Total Post of the
Cronk's Double Braced Steel Rail, \$\frac{9}{100t}\$. Cronk's O. N. T. Rail 3346 Lanes' O. N. T. \$\frac{9}{100}\$ ft. 1 linch. \$\frac{9}{2}\$, 75 Lanes' Standard. \$\frac{9}{2}\$ 100 ft. 3.75 Lawrence Bros. \$\frac{9}{10}\$ ft. 4366 McKinney's None Better \$\frac{9}{2}\$ ft. 3366 McKinney's Standard. \$\frac{9}{2}\$ ft. 5366 Stowell's Cast Rail. Flain. 257 Stowell's Wrought Bracket, Plain. 8366 Dakes—	Jute Rope, No. 1, 44 II. Jute Rope, No. 2, 34 III. and up
Lawrence Bros. 100 ft. 8.75	and up
McKinney's Standard	Galvanized
Stowell's Steel Rail, Plain	Ropes, Hammock –
Net Prices, Malleable Rakes: 10 13 14 16-tooth	Galvanized
Shank\$1.50 1.60 1.75 1.85	Boxwood . 75&10&10&10&10@75&10
Sociation 1, 1900, List: Cast Steel	Ivory toch 10c
Malleable	Lufkin's Lumber
20 teeth \$3.25@3.59 24 teeth \$3.60@3.75	Ivory
Jackson Lawn, 29 and 30 teeth	Sad Irons-See Irons, Sad.
Kohler's: P doz. \$4.00	Sand Irons—See Irons, Sad. Sand and Emery Paper and Cloth— See Paper and Cloth.
Kohler's: Lawn Queen, 20-tooth, \$\psi\$ doz\$3.60 Lawn Queen, 24-tooth, \$\psi\$ doz\$2.85 Paragon, 24-tooth, \$\psi\$ doz\$3.00 Steel Garden, 14-tooth, \$\psi\$ doz\$3.00 Walleable Garden, 14-tooth, \$\psi\$ doz\$3.00	Seen Corde—See Cord Scan
Paragon, 24-tooth, 4 doz\$3.00 Steel Garden, 14-tooth, 9 doz\$3.00 Malleable Garden, 14-tooth. 9 doz. \$2.25	Sash Locks—See Locks, Sash. Sash Weights— See Weights, Sash.
Masps, norse-	Sausage Stuffers or Fillers Sausage.
Heller Bros	Saw Frames— See Frames, Saw.
New Nicholson Horse Rasp70&10%	Saw Sets—See Sets, Saw. Saw Tools—See Teels, Saw,
See also Files. Razors— Boracla	Saws-
RAZOFS— Boracle. Fox Razors, No. 42 # doz. \$20.00 ; Fox Razors, No. 44 # d z. \$24.00 ; Fox Razors, No. 89, Platina, # doz. \$24.00 ; Silberstein:	Circular50@50&10% Band50&10@60g
Silberstein:	Circular
Carbo Magnetic	Wood Saws 40% Hand, Compass, &c
Silberstein:	Dission 3 Circular Solid and Inserted Tooth 50
Razor Strops— See Strops, Razor.	Band 1 to 11
Hendry Aluminum, German Silver, Gold, Bronse, Silver, Rubber, Populo	Mulay, Mill and Drag
and Salmon, Single Action, Multiply- ing and Quadruple, all sizes. 25%	Woodsaw Rods. 40@40&7/48 Woodsaw Rods. 205
and PN, 202P and PN, 102 PR and PRN, 202 PR and PRN, 304 P and	D8, 120, 79, 77, 8
PN, 00904P and PN, 502 and 502N, 802 and 802N, 02084N, Competitor.50g	Compass, Keyhole,&c. 25,425&713
Series, 3004N and PN, 4N and PN 2904N, 2904Pand PN, 002904PN, 0924	C. E. Jennings & Co.'s.: Back Saws
Razor Strops—40% Razor Strops—40% Razor Strops—40% Razor Strops—40% Reois—19 See Strops, Razor—19 See See Strops, Razor—19 See See See See See See See See See Se	Back Saws. 25g Butcher Saws. 25g Compass and Key Hole Saws. 25g Framed Wood Saws. 40g Hand Saws. 25g Wood Saw Blades 45g Peace: 45g
Registers— Leading Sizes.	Hand Saws
Rlack Jap	Peace: Circular and Mill
Nickel Plated	Circular and Mill
prices of Registers, and some very low	Circular and Mili
quotan mare current on Hack Japanned. Revolvers— Single Action	Circular Saws.
Double Action	Orescent Ground Cross Cut Saws. 357 One-Man Cross Cuts
Hammerless, S. 16 Riddles, Crain or Sand— 16in. per doc. \$2.00@81.15	Butcher Saws
15in. per dox\$2.00@82.25	Hand Saws

THE IR	ON AGE	. 55
\$2,25@\$2.50 \$2,50@\$2.75 nd Ringers	Compass, Keyhole, &c	Regular list
\$3.50@\$3.50 \$3.50@\$2.76 and Ringers— III Rings— \$ \$1\fo \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Concave Blades	Atken's: Genuine
s, Gray Iron.doz, 55\@60c rs. Mal. Iron, per doz	1868 53W Frames 175, 180 330 405 1862 53W	Atkin's.: Criterion
75@80c per gro. \$5.75@6.00 ersper doz. \$0.65@70 gsper gro. \$6.00@6.25	Griffin's Hack Saw "lades	Plate. 20% Spring Hammer. 30% Disaton's Star and Monarch 35% Morrill's No. 1, \$15.00. 40&20% Nos. 3 and 4 Cross Cut. \$23.00
gers. per doz. \$1.00@1.10 \$ gro. \$6.00 \$ doz. \$3.50 and Burrs	Barnes Scroll Saw Blades . 40% Barnes Velocipede Power Scroll Saw, without boring attachment, \$18: with boring attachment, \$20	Nos. 3 and 4, Cross Cut, \$23.00. No. 5, Mill, \$31.00
	See Beams, Scale. Scales—	Sharpeners Knife— Chicago Wheel & Mfg. Co
ing and Baking -See Pans, Roasting and	Fomily. Turnbull's30@30&10% Counter: Hatch. Platform. Mozto'llbs.dox\$5.50 Two Platforms, % oz to 3 lbs	Sharpeners Skate— Eureka Skate Sharpener # doz. \$2.00 Shaves, Spoke—
1's Anti-Friction	Union Platform, Plain\$1.600, Union Platform, Striped\$1.85@\$.15 Chatillon's:	Shaves, Spoke— Iron
in and larger	Favorite 40% Grocers' Trip Scales 50% Pelotuze Scales—Household, Counter-Confectionery, Postal, Ice, &c	Cast fron 7 8 9 in. Best\$16.00 18.00 20.00 gro. Good\$13.00 15.00 17 00 gro. Chea p \$5.00 6.00 7.00 gro. Straight Trimmers, &c.:
1b. 916010160 56-inch1b. 10 @10160 5-16 in1b. 1016@11 c red Rope,	Box, 1 Handle	Nickel 60@60@10t
red Rope, 1b. 9%@10%c Rope. 1b. 9%@10%c and largerib. 7 @ 1%c%4nchlb. 7%@ 7%c 6-16 inlb. 8 @ 8%c	Box. 2 Handledoz. \$3.75@4.00 Ship, No. 1, doz. \$3.50; No 2.	Fair qual. Jap
tope, # to 10	Bonanza Window Screens60@60&5%	Wilkinson's Sheep1900 list, 505
d, Medium 1	MaineWindow Screen Frames. 40&10&5% Perfection Window Screens60@60&5% Phillips' Window Screen Frames. 60&10&5%	Steel Blades
4-in. and larger lb. 14 c 4-in. and larger lb. 11½c 4-in. and larger lb. 9 c No. 1, ¼ in. lb. 64c	Porter's Hummer Window Screens. 60@60&55 Porter's Klondike Window Screens 60&22@60&746 Wabash Spring Adj. Screen	Niagara Snips
No. 1, ¼1n, lb, 6½c No. 2, ¼-in, lb, 6 c No. 10 lots No. 2 lots	Screw Drivers— See Drivers, Screw.	Cronk's Grape Shears and Tools— Cronk's Grape Shears
	Screws—Bench and Hand— Bench, Irondoz. 1 in., \$5.003.55; 14, \$3.503.75; 14, \$6.004 50 Bench, Wood, Beechdoz. \$3.5032.75	Pruning Shears, all grades. 40@40&55 Orange Shears
50	Hand, Wood	Nagley's Pruning Shears
10&10@40&10&10&10&10 1	Coach and Lag, Gimlet Point, list Oct. 1, '99	Patent Roller Hatfield's, Sargent's list, 75&10&105 Reading
.75&10&10@75&10&10&10 35&10@35&10&10; 	Standard List	Wrightsville, hatheld Pattern80% Sliding Shutter— Reading list
ind Emery Paper loth— er and Cloth, ords—See Cord, Sash.	Sargent	Shelis Shelis, Empty— Brass Shelis, Empty— First quality, all gauges
ocks—See Locks, Sash. felghts— ahts, Sash.	Flat or Round Head, Iron.50@50&10\$ Flat or Round Head, Brass Set and Cap.	Paper Shells, Empty: Acme, Ideal, Leader, New Rapid, S nokeless, 10, 12, 16 and 20 gauge,
e Stuffers or Fill- ee Stuffers or Fillers ames—	Wood-	Club Vellow Rival, 10 12 18 and
mes, Saw. 158—Soo Sets, Saw. 1018—Soo Tools, Saw.	List Jan. 1, 1900. Manufacturers' printed discounts: Flat Head, Iron	12 gauge
		Trap and Metal Lined, 10, 12, 16 and 20 gauge
36&53 and Drag 36&53 .50&103 .00 .00 .00 .00 .00 .00 .00 .00 .00 .	Grass Scythes :	Loaded with Smokeless Powder, medium grade
bild and Inserted Tooth 50g 4 in. wide 60g 134 70g 134 70g 134 50g50&10g 135 50g50&10g 135 35g35&7gg 136 40g40&7gg 130ds 40g40&7gg 130ds 12, 99, 9, 16, d100	Natural Finishper doz. \$7,85 Folished Bladeper doz. \$7.75 Painted or Bronzed.per doz. \$7.56 Weed and Bush.per doz. \$7.56,7,50	Shoes, Horse, Mule, &c.
and Drag	Scythe Snaths— see Snaths, Scythe. Seeders— Raisin— Enterprise	Burden's, all sizes, \$\keg
30ds. 40@40&75 30ds. Nos. 12. 99, 9, 16, d100, 95, 7, 7, 8,	Brad Awl and Tool Sets:	Drop, B and larger, per 25-lb, bag \$1.70@1.75
	doz. \$2.50@2.60 A!ken's Sets, Awl and Tools: No. 20, \$ doz. \$10.00	Chilled, 25 lb, bag \$1.70@.1.75 Dust Shot, 25-lb, bag \$2.00 Markle's Chilled \$1.75 Tatham's Chilled \$1.75 Note.—There is some irregularity in prices because jobbers often undersell the manufacturers.
ws	A'ken's Sets, Awi and Tools: No. 20, \(\pi \) doz. \(\frac{\$4\$}{3}.50 \) (\(\pi \) 2.00. \(\ldots \) (0.01. \(\ldots	the manufacturers. Shovels and Spades— No. 2, Polished, Sq. or Rd. Point, D or L Handle:
d Mill	₩ dos\$9.00	A1, B2, 1st Grade, 2d Grade Plain Back \$10 50 \$9 60 \$17ap Back 9.90 9.00
Jan. 1, '99	Square	Cleveland Pat'n 10.20 9.30 C3, D4, 3d Grade. 4th Grade Plain Back \$3.70 48.10
Oas Cuts	Knurled. Goodgro. \$6,00@6,50	Strap Back 8.10 7.50 Cleveland Pat'n 8.40 7.80 All other sizes add 80c doz.
	Mayhew'sper gro. \$9.00 Snell'a Corrucated, Cup Pt. per gro. \$7.50 Snell's Knuried, Cup Ptper gro. \$7.50	Note.—The above are the regular Asso- ciation prices but are often shaded by

56	THE IRO	N AGE
Jobbers \$0.50@1.00, and Common, Plain Back Shovels are generally sold by Jobbers	Squeezers-	Misc Double Point
as about \$6.75.	Lemon- Wood, Common, gro., No. o. \$5.25 @\$5.80; No. 1, \$6.25@\$6.50.	Steel Wire B.
Sieves and Sifters— Hunter's Imitationgro, \$9.50@10.00 Buffalo Metallio Blued, \$8, & Co., \$gr.: 142.16 162.18 18820 \$12.90 \$13.80 \$15.00	Wood, Porcelain Lined: Cheapdoz. \$2.40 2.75	See also Nat
\$12.90 \$13.80 \$15.00 F. J. Meyers' Mfg. Co.:	Good Grade doz. \$3.00@\$3.50	Tanks, C
Eclipso	Tinned Irondoz. \$0.75@1.25 Iron, Porcelain Lined doz. \$3.90@3.25 Jennings' Star	Tanks, C Emerald, S. S. & Emerald, S. S. & Queen City S. S. Queen City S. S.
F. J. Meyors' Mrg. Co.: Eclipso. \$\pi_gr. \\$9.25 Excelsior \$\pi_gr. \\$10.35 Hunter's Genuine \$\pi_gr. \\$10.35 No Name, Hunter's \$\pi_gr. \\$10.35 Standard \$\pi_gr. \\$10.35 Shaker (Barler's Pat.) Flour Sifters \$\pi_dos. \\$3.00 \$\pi_gr. \\$0.35 Sleves, Tin Rim— \$\pi_{gr} \pi_gr. \\$0.35	Staples-	Tapes, N
Shaker (Barler's Pat.) Flour Sifters.	Barbed Blindlb. 7@7%c Electricians', Association list	American Asse
Sieves, Tin Rim- Per dozen	Fence Staples, same price as Barbed Wire, See Trade Report,	Patent Leather
Mesh	Poultry Netting, Staples per lb	Chesterman's. Eddy's Steel
Mesh. 11, 16 18 20 Black full size. \$0.95 .98 1,00 1,10 Plated, full size. \$1.05 1.03 1.10 1.90 Black, scant \$0.78 .80 .85	Grand Orossing Tack Co.'s sist80&10%	Eddy's Steel Eddy's Metallic Keuffel & Esser Lower list, 18
Sleves, Wooden Rim- Nested, 10, 11 and 12 Inch.	Steels, Butchers'-	Lufkin's Steel Lufkin's Metall Teeth Ha Steel Harrow
Mean 18, Neafed, doz	Dick's	Steel Harrow
Mesh 26, Nested, dos75@ .85 Mesh 24, Nested, dos 90@1.00	C. & A. Hoffmann's	ed, base pe
Sinks—Cast Iron—Standard list.—Standard list. Standard list.—Standard list.—Standard list.—Standard list.—Standard list.—Standard list. Standard list.—Sta	Stocke and Dies-	Tin Case
Standard list	Blacksmiths	Ties, Ba
Wrought Steel- New Era, Galv'd and Enameled70&5%	Green River	Ties, Wa
New Era, Painted	Reces New Serew Plates25@305	Galv. Steel 5.5
Skeins, Wagon-	310118-	Galv. Steel 5-8 Galv. Steel 5-8
Cast Iron	Chicago Wheel & Mfg. Co:	Tinners' See Shears
States-	gro., 12 inch, \$10.50	Tinware
Siates— Factory Shipments. "D" Slates	Black Diamond S. 8 # gro. \$12.00 Lamoille 8. s # gro. \$11.00	Stamped, Japa very generall;
"D" Slates	White Mountain S. S P gro. \$9.00 Green Mountain S. S P gro. \$6.00	Tire Ben
Victoria, etc., Noiseless Slates60& 7 tens &5%	No. 1 Indian Pond S. S. W gro. 87.00 No. 2 Indian Pond S. S. W gro. 84.50	&c.—See ters. Tire. Tobacco
7 tens &5% Wire Bound	Soythe Stones— Chicago Wheel & Mfg. Co: Gem Corundum, 10 inch, \$8.00 per gro., 12 inch, \$60.90 Pike Mfg. Co. 1901 list: Black Diamond S. 8 \$\psi\$ gro. \$12.00 Lamolile S. \$\text{S}\$ \$\psi\$ gro. \$11.00 White Mountain S. \$\text{S}\$ \$\psi\$ gro. \$9.00 Green Mountain S. \$\text{S}\$ \$\psi\$ gro. \$6.00 \$\psi\$ \text{Y}\$ at a Indian Pond S. \$\text{S}\$ \$\psi\$ gro. \$7.50 No. 1 Indian Pond S. \$\text{S}\$ \$\psi\$ gro. \$4.50 Leader ked End S. \$\text{S}\$ \$\psi\$ gro. \$4.50 Balance of 1901 list: \$31\sqrt{S}\$ Oil Stones, &c. Chicago Wheel & Mfg. Co., 1901 list:	See Cutter
Slaw Cutters—See Cutters. Slicers, Vegetable— Sterling \$ 2.00	Chicago Wheel & Mfg. Co., 190! list:	Tools-C
Snaps, Harness	Chicago Wheel & Mfg. Co., 190! list: Gem Corundum Oil, Double Grit50% Gem Corundum Axe, Single or Double Grit554	Atkins' Cross C
Snaps, Harness— German	Gem Corundum Axe, Single or Double Grit	Simonds' Impresiments' Cresc
Govert Mfg. Co.; 35&9s Deroy 35&9s High Grade 45&2s Jockey 40&2s Trojan 45&2s Yankee 35&2s Yankee, Roller 30&2s	Arkansas Stone, No. 1, Sto5 1/61n. \$2.89	L. & I. J. White
Trojau	Arkansas Slips No. 1	See Lifter
Yankee, Roller	Rosy Red Washita.4 to 8 in 60¢	Traps-
Crown	Washita Stone, No. 9. 4 to 8 ia. 30¢ Lily White Slips. 904	Balloon, Glob doz. \$1.150
Model	Washita Silps. 90# Rooy Red Silps. 90# Washita Silps, Katra. 80# Washita Silps, No. 1 70# India Oil Stones (entire list) 25%	Harper, Char doz. \$1.250
W. & E. T. Fitch Co.: Bristol 40&10% Empire 50&5% German 40% National 50&5%	India Oil Stones (entire list)	Oneida Patte
German	Hindostan No. 1, Regular B B 86 3 Hindostan No. 1 Small B B 106 3 Honor Call Mindo	Newhouse Hawley & Nor Victor (Oneids
Perfect. 45% Clipper	Axe Stones (all kinds)	Victor (Onelds Star (Blake Pa
	Gueer Creek Slips	Mou
Victor	Natural Grit Carving Knife Hones.	Mouse, Wood,
out Katte a r stone o day and	Unick Edge Pocket Knite Hones. 135	American Patt
Snaths— Soythe		
Soldering Irons— See Irons, Soldering.	Tanite Mills: Emery Oil, # dos. \$5.0050@60%	No. 2, Detro
Spoke Trimmers—	Stoners- Cherry-	No. 1, Detroi \$4.50; in % No. 2, Detro \$4.25; in % Detroit Mart \$2.00; in % Diamond Joe R
Spoke Trimmers— see Trimmers, Spoke. Spoons and Forks— Silver Plated—	Stops, Bench-	Diamond Joe B
	Willows Palls 188104	Marty French (Genuine): No. 1, Rat, E No. 3, Rat,
Cheap	Morrill's, No. 2, \$11.0050&10%	No. 3, Rat.
1847 ogers Bros	Stove Boards	No. 4, Mouse
	See Boards, Stove. Stove Polish—See Polish, Stove.	No. 5, Mouse.
Simeon L. & Geo. d. Rogers Co.: Silver Plated Flat Ware	Strainers, Pump— Diamond Joe Pump Strainersper dos. 75¢	Schuyler's Rat No. 2, ∓ gr. \$18.00
Miscellaneous— German Silver	Straps, Box-	\$18.00
German or Nickel Sliver, Special list	Cary's Universal case lots90&10; Stretchers, Carpet—	Markle's, each
Tinned Iron—	Cast Iron, Steel Points doz. 55@65c	Bonney's Nos.
Springs Door -	Strops, Razor-	Diaston Brick
	Smith & Hemenway Co705	Disston Plaste Disston "Star den Trowels
Star (Coil)	Enterprise Mfg. Co25@25&75% National Specialty Mfg. Co., list Jan. 1, '97	Never-Break S
Carriage, Wagon, &c.	1, 97	Peace's Plaste Rose Brick and Woodrough&
Black or & Bright, lb	Tacks Brads, &c	Trucks,
Bright, lb	List Jan. 15. '99. Carpet Tacks, American 90&30@\$	B. & L. Block C Daisy Stove Tr
1½ x 2 x 28 per pr	American Cut Tacks90c206\$ Swedes Iron Tacks90c206\$ Swedes Upholsterers' Tacks\$	Model Stove T
Sprinklers, Lawn-	90c40@\$	Tubs, W
Enterprise	Gimp Tacks90&40@\$ Lace Tacks90&40@\$	Galvanized, Galvanized W
Sources-	1 Dill Doctore and Pailsond Task	Per dos.\$5 2
Nickel plated List Jan. 5, 1900	Bill Posters and Rauroda Tack\$ 90c30@\$ Hungarian Nails	Miss
Nickel plated List Jan. 5, 1900 Steel and Iron 70c 100/765 Rosewood Hall Try Square and T. Bevels	Hungarian Nails	No. 9, 14 a
IFOR FIGH, ITH CHIMGEEN GIRG IS DEVELS.	Note The above prices are for straight Weights. * An extra 5% is given	No. 9, 14 as No. 12, 14 as No. 18, 14 as No. 24, 14 as No. 36, 14 as
Disston's Try Sq. and T-Beve's60&10% Winterbottom's Try and Miter50&10%	Note.—The above prices are for straight Weights. An extra 35 is given Star Weights and an extra 10.4% on Standard Weights.***	No. 36, 14 a

RO	N AGE	August 29, 1901
1	Miscellaneous-	Chalk Line, Cotton, 14-lb. Balls
5	Double Point Tacks90.66 or 7 tens Steel Wire Brads, R. & E. Mfg.	Cotton Mops, 8, 9, 12 and 15 lb. to
.75	Co.'s list	Cotton Wrapping, 5 Balls to lb
.50	Tanks, Oil— Emerald, S. S. & Co	American 2-Plu Hemp, 14 and 14-lh
.25	Emerald, S. S. & Co60-gal., \$4.00 Queen City S. S. & Co., : 0-gal	Balls
.90		India 2-Plu Hemn. W and W-lb
Mic	Tapes, Measuring- American Asses' Skin40ct 10@508	India 3-Ply Hemp, 1-lb, Dalls 8140
10%	Patent Leather 25@30&5% Steel 40@40&5% Chesterman's 25@25&5%	2. 3. 4 and 5-Ply Jute. Wilh. Ralls.
.	Chesterman's	Mason Line, Linen, 1/4-lb, Balls450 No. 864 Mattress, 1/4 and 1/4-lb, Balls.870
10%	Keuffel & Esser Co., Steel and Metallic, Lower list, 1899	No. 264 Mattress, ¼ and ¼-lb.Balls.37c Wool
30%	Lufkin's Steel	
30% 25%	Chesterman's #50,250.55 Eddy's Steel 40,400.55 Eddy's Metallic 534,4934,455 Reuffel & Esser Co., Steel and fletallic. Lower list, 1899	Vises- Solid Box
10%	ed, base per lb	Parallel-
100	Tin Case80&10@80&10&5%	Athol Machine Co.: Simpson's Adjustable404
10% 50% 40% 25%	Ties, Bale-Steel. Standard Wire50&10&5%	Standard 40s Amateur 25s Bonney's 40s Fisher & Norris Double Screw15&10s
25%	Ties, Wall- Cleveland Wire Spring Co.:	
25% 30% 25%	Galv. Strel 5 32 x 614 in. # 1000.810.00 Galv. Steel 5-32 x 814 in. # 1000.811.00	Keystone
00%	Cleveland Wire Spring Co.: Galv. Nt-el 5 32 x 616 in. # 1000.\$10.00 Galv. Nteel 5 32 x 816 in. # 1000.\$11.00 Galv. Steel 5 32 x 116 in. # 1000.\$14.00 Galv. Steel 5 32 x 1516 in. # 1000.\$14.00	Machinists'
_	Tinners' Shears, &c.— See Shears, Tinners', &c.	Clincher
DP	Tinware-	Clincher
	Stamped, Japanned and Pleced, sold very generally at net prices.	
881/8	A.c.—See Benders and Upset- ters. Tire.	Victor 20@255 Regulars
00		Prentiss
,	Tobacco Cutters— See Cutters, Tobacco.	Snedtker's X, L
.50%	Coopers'— L. & I. J. White	Saw Filers-
le l		Bonney's, No. 1, \$13; No. 3, \$1650 \$ Disston's D 3 Clamp and Guide, \$\pi\$ des. \$30
.55% .55% 933/3	Atkins' Cross Cut Saw Tools40% Simonds' Improved	\$30
1	L. & I. J. White	Reading 60% Wentworth's Rubber Jaw, Nos. 1, 2 and 3 45&50%
	Transom Lifters- See Lifters, Transom.	Miscellaneous- Bignall & Keeler Combination Pipe
25%	Traps- Fly-	Vise608 Parker's Combination Pipe:
i sa	Balloon, Globe or Acme doz. \$1.15@1.25; gro. \$10.50@11.00 Harper, Champion or Paragon	87 Series
	doz. \$1.25@1.40: gro. \$12.00@12 50	No. 870
.25%	Game- Oneida Pattern75&10&5@80&5%	Wads-Price Per M.
100 A	Newhouse	B. E., 11 up
3788		B. E., 9 and 10
.40%	Mouse, Wood, Choker, doz, holes	P. E., 11 up
.40%	Mouse, Round or Square Wire	P. E., 9 and 10. 1.35 P. E., 8. 1.50 P. E., 7. 1.50
12	doz. \$0.85@1.00 American Pattern French Rat and Mouse	Ely's B. E., 11 and larger, \$1.70@1.78
889-68	Traps— No. 1, Detroit Marty Pattern, # doz. \$4.50; in 16 gro, lots, # doz	Wagon Jacks-
200%	No. 2, Detroit Marty Pattern, W doz. \$1.25; in 1/4 gro, lots, W doz\$3.00	Ware, Hollow-
	\$2.0; in \(gro. \) lots, \(\P\) doz \$1.75	Aluminum— 8, 8, & Co, Reduced List409
30%	Diamond Joe Rat Traps per doz. \$1.00 Marty French Rat and Mouse Traps	Cast Iron, Hollow-
10%	No. 1, Rat. Each \$1.19%; P doz. \$19.00 No. 3, Rat. P doz. \$.6.00; case of 50	Stove Hollow Ware: Ground
10%	No. 316, Rat. W doz. \$4.75; case of 79	White Enameled Ware: Maslin Kettles75&10&5@809
&5%	(Genuine): No. 1, Rat. Each \$1.194;: \$\parallel \text{dos. \$12.00} No. 3, Rat. \$\parallel \text{dos. \$6.00}; \text{case of 50} No. 3\parallel \text{Rat.} \$\parallel \text{dos. \$6.00}; \text{case of 72} \$4.25 \text{dos.} \$4.25 \t	Covered Ware: Tinned and Turned
ove.	No. 5, Mouse, W doz. \$9.75; case of 150 \$2.25	10&10@10&10&5
. 75¢	\$2.25 Schuyler's Ras Killer, No. 1, \$gr. \$30.00; No. 2, \$gr. \$30.00; Mouse, No. 3, \$18.00	See also Pots, Glue. Enameled—
105	Target-	Agate Nickel Steel Ware, ust July 99.
20%	Trimmers, Spoke-	L. & G. Opal Enameled Wars
0.65c 1.75	Trowels-	Tea Kettles-
.70%	Diaston Brick and Pointing30s Diaston Plastering20s Diaston "Standard Brand" and Gar-	Galvanized Tea Kettles:
	Disston "Standard Brand" and Gar- den Trowels	Steel Hollow Ware.
734% in.	gro. \$7.00	Amount Spiders & Griddles 65@65&51
.80%	Peace's Plastering	Porcelained
	Trucks, Warehouse, &c	Newer Break Kettles 601
\$	B. & L. Block Co.'s list	Never Break Kettles
\$	Tubs, Wash-	Washboards-
\$	No. 1 \$ 8 Galvanized, per doz. \$5.00 \$50 6.00	Consecut family size, bent frame. \$3.60
\$	Galvanized, per doz. \$5.00 550 6.00 Galvanized Wash Tubs (8. 8. & Co.): No. 1 2 3 10 20 30 Per dos. \$5 25 6.00 6.75 6.50 7 25 8.00	protector\$3.00
£ 10%	Twine-	Double Zine Surface: Saginaw Globe, family size, station-
€15×	Miscellaneous-	ary protector \$2.60 Cable Cross, family size, stationary protector \$2.90
£10% £10%	Flax Twine	Single Zine Surface : Naiad, family size, open back perfo-
for	No. 18, 4 and 4-lb. Balls. 16c 18c	Naiad family size, open back perfo- rated. Saginaw Globe, protector, family size, ventilated back
% on	No. 36, 14 and 16-lb. Balls 15c 17c	size, ventilated back

ndia 2-Ply Hemp, 1-lb. Balls.

126.15c
126.15c Parallel-Amateur mney's 405
sher & Norris Double Screw ... 15&105
ollands': 405
Kachinists' ... 405
Kevatone ... 55&55
wis Tool Co ... 20&305
assey's Perfect ... 15@306
assey's Perfect ... 15@306 arker's Combination Pipe: Nads-Price Per M. Wagon Jacks-See Jacks, Wagon. Ware, Hollow-See also Pots, Glue. Washboards-Solid Zine:

Crescent, family size, bent frame, \$3.60 feed Star, family size, stationary protector.

Saginaw Globe, family size, stationary protector.

Sable Cross, family size, stationary protector.

Surface:

Naiad, family size, stationary protector.

Naiad, family size, open back perforated.

Saginaw Globe, protector, family size, ventilated back.

\$2.55

August 29, 1901	THE IK	ON AGE	
Brass Surface: Brass King, Single Surface, open back. No. 1001 Nickel Plate, Single Surface \$3.00 Washers— Leather, Axle— Solid	Some Foundries make price \$1@\$\$ lower. Well Buckets, Calvanized See Pails, Galvanized. Whoels Well— 8-in., \$1.50@.1.75; 10-in., \$1.30@\$.10; 12-in., \$2.35@.2.75; 11-in., \$3.75@.6.65 Wire and Wire Goods— Bright and Annealed: 6 10 9	Brass, list Feb. 36, '96	Combination Black 40&5c Combination Bright 405c Extra Heavy 45c Morrick's Fattern 505c Morrick's Fattern 505c No. 3 Pipe, Bright 55c Bindley Automatic 805c Boardman's 205c Coes' Genuine 40&10&26&5c Coes' Genuine 40&10&26&5c Coes' Mechanics' 40&10&26&5c Coes' Mechanics' 40&10&26&5c Eagle 50&105c Eagle 70&105c Eagle
PAIN	rs, oils and co	LORS —Wholesale I	Prices.
White Lead, Zinc, &c. Lead, Foreign white, in Oil	Red. Venecian. Amer. № 10 0 5 0 10 Red. Venecian. Amer. № 10 10 10 10 10 Terra Alba, French. № 10 10 10 Terra Alba, American No. 2 45 0 50 10 Terra Alba, American No. 2 45 0 50 Umber, Turkey, Raw & Powd. 2. 3 10 0 7 10 10 10 10 10 10 10 10 10 10 10 10 10	Brown, Vandyke. 944918 Green, Chrome. 10 612 Green, Chrome. 10 613 Green, Paris. 924 Slenna, Raw. 10 613 Slenna, Burnt. 10 613 Umber, Raw. 94412 Umber, Burnt. 94412 Miscellaneous. Barytes, Foreign, W ton. \$19.00 231.00 Barytes, Amer. Hoate: 19.00 230.00 Barytes, Amer. Hoate: 19.00 230.00 Barytes, Crude, No. 1 9.00 210.00 Chalk, in bulk. W ton. 25.09 2.60 Chalk, in bulk. W ton. 10.00 31.00 Chalk, in bulk. W ton. 10.00 31.00 Chalk, in bulk. W ton. 25.09 2.60 Chalk, in bulk. W ton. 10.00 30.00 Whiting, Common. 91.00 30.00 Whiting, Common. 91.00 30.00 Whiting, Gulders. 45.66 Whiting, Gulders. 45.66 Whiting, Common. 91.00 30.00 Whiting, Common. 91.00 Whiting, Common. 91.	Linseed, City, boiled
THI The oldest paper is		ON A	GE.
an	d a standard authority on all matte	ers relating to those branches of indu.	stry.
RA		PTION: INCLUDING PO	STAGE.
	FHURSDAY morning, ber FIRST and THIRD THURSDAYS of RST THURSDAY of every month, Bulle RATES OF ADV	t,	7, • • 1,00 "
Boston,	Mason Building, 70 K The Cuyahoga, 311 St FICE: Hastings House, Norfolk	ilby Street,	WALTER C. ENGLISH, Manager. EZRA S. ADAMS, Manager,

LONDON OFFICE: Hastings House, Norfolk Street, Strand.

AUSTRALIAN OFFICES: Melbourne, Hardware Chambers, 231 Elizabeth Street; Sydney, Palings Building.

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When these cannot be obtained, postage stamps of any conduct will be received.

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Entered at the Post Office, New York, as Second-class Matter.

CURRENT METAL PRICES.

AUGUST 28, 1901.

The following quotations are for small lots. Wholesale prices, at which large lots only can be bought, are given elsewhere in our weekly market report.

The remaining desiration				
IRON AND STEEL-	Sheet and Bolt- January 19, 1900. Net.		Common High Brass. in. in. Wider than 26 28 and including 28 30	in in in in in in in in
Bar Iron from Store— Common from: Duty, Round, 0.6 # B; Square, 0.8 # B	Prices, in cents per pound. Sheet 10 x 60.			
Obmmon iron: Duty, Round, U. of # 5; Square, U. of # 1 to 134 in. round and square	2		To No. 20, inclusive 39 .43 Nos. 21, 22, 23 and 24. 40 .43 Nos. 25 and 26 41 .44 Nos. 27 and 2842 .45	.48 .59 .57 .63 .71 .49 .53 .58 .65 .75
Sedined From: 10 15 in. round and square.	than than than than than than than than	1b.	*Special prices not less than Add %# * B additional for than Nos. 28 to 38 inclusive. D	80 cents. each number thinner
Angles: Cia w b Sin. x 4 in. and larger	longer longer longer posent longer to 6402 go lb. to 32 lb. to 32 lb. to 32 lb. to 34	and r lo 9% and 9 to 7%		st February 28, 1896.
8 to 3½ in. x 3-16 in and thicker 2.10e	Not wider than Not wider than And longer than And longer than Go. A. Over, golb. sheet go as coand neaver. go or, to go. as to to golb. 10 og lo. 10 og lo. 11 og or. 12 og lo. 12 og lo. 12 og lo. 12 og lo. 13 og lo. 14 og lo. 15 og or. 15 og lo. 15 og or. 15 og lo. 15 og or. 16 og or. 17 og or. 18 og. 18 og.	9% to 8 oz. 4 6% to Lighter	Wire in Coils.	Com Gild's
1 to 1½ in. x 3-16 in	3 M a 2	1	Brown & Sharpe's gauge the standard.	high brass. and
Rods-56 and 11-16 round and square. \$10,25-36 Angles: \$1 n. x \$1 in. and larger \$2.30 s \$ ln. x \$1-16 ln. \$2.20 s \$ lo \$6 in. x \$3-16 ln. \$2.30 s \$ lo \$6 in. x \$3-16 ln. \$2.10 s \$ lo \$6 lo \$1 in. x \$3-16 ln. \$2.00 s \$ lo \$1 lo \$	Ins. Ins. Ins. 30 72 21 21 21 21 22 23 23 30 96 79 21 21 21 21 22 22 24		All Nos, to No. 10, inclusive	CODDer
1 in 2.60:	36 79 21 21 21 21 23 25 36 79 21 21 21 21 23 25 36 96 72 21 22 21 23 23 27	a8 31	No. 17 and No. 18 No. 19 and No. 20.	23\6 .27\6 .28\4 .24 .28 .32 .25 .29 .33 .26 .30 .34
	36 120 96 21 21 21 23 24 96 120 21 21 22 23 24		No. 21 No. 22 No. 23	26 .30 .34 .27 .81 .85 .28 .39 .36
Channels, 3 in. and larger. Bands—14 to 6 x 3-16 to No. 8	48 96 72 21 91 23 24 86 99 48 220 96 21 21 23 25 29		All Nos, to No. 10, inclusive Above No. 10 to No. 16 No. 17 and No. 18 No. 19 and No. 20 No. 21 No. 22 No. 23 No. 24 No. 25 No. 25 No. 26 No. 27 No. 27 No. 29 No. 29 No. 30	30
14 ia, and larger. 2 30c Beams. 2,50c Beams. 3 ia. and larger. 2,50c Bands. 14 to 8 x 3-16 to No. 8. 2 50c Bands. 14 to 8 x 3-16 to No. 8. 2 50c Bands. 14 to 8 x 3-16 to No. 8. 2 50c Burden's Hest' Iron, base price. 2 5 3.15c Burden's 'H. B & S. Iron, base 2 5 2.05c Ulster' 2 5 3.05c Ulster' 2 5 3.05c Ulster' 3 75.64.25c Rorway Bars. 3 75.64.25c Rorway Shapes. 4.0064.50c	48 230 91 22 94 27 60 72 31 20 20 84 27 60 96 72 21 21 23 25 30 60 120 96 21 22 24 27		No. 27 No. 28	38 .49 .46 .49 .46 .51
Norway Bars	79 06 91 99 94 99		No. 30 No. 31	48 .59 .69 .51 .55 .67 .55 .59 .78
Merchant Steel Irom Store	72 144 92 94 99 808 130 92 94 30		NO. 31 NO. 31 NO. 32 NO. 33 NO. 34 NO. 34 NO. 35 NO. 36 NO. 37	. 26 .30 .34 .32 .35 .32 .36 .34 .38 .32 .36 .40 .35 .39 .43 .45 .45 .45 .45 .45 .55 .67 .75 .55 .67 .75 .55 .67 .76 .55 .67 .76 .68 .82 .76 .80 .1.50 .1.00 .1.04 .1.70 .1.30 .2.00 .2.00 .2.00 .3.25 .2.60 .2.60 .5.75
Resemer Machinery	der } 290 24 25 17 128 3 244 26 99		No. 36 No. 37	
SUILBIT IO.S	led Round Copper, % lach diameter an	d over, * b	No. 39	1.30 1.34 2.00 2.00 2.00 3.25 2.60 2.60 5.75
SOFT Steel SHEETS	felles, Segments and Pattern Sheets, 3¢ % rer price of Sheet Copper required to cut or Hard Rolled Copper 14 os. ¾ squa pavier, 1¢ % nover the foregoing price of or Hard Rolled Copper, 16 pitter the name foot, 2¢ % nover the foregoing price of the foot of th	them from.	Discount, Brass Wire, 20%; List November Spring Wire, 2¢ # 3 advance	
No. 8	avier, if \$ 5 over the foregoing price i or Hard Rolled Copper, lighter th	an 14 oz. P	Spring Wire. 2# P advance Tobin Bro	onza-
Sheet Iron from Store.	Polished Copper, 20 in, wide and un lyance over the price for Cold Rolled C	der. 1 / P D	Straight, but not turned, Rods b, net. Finished Piston Rods, % to 9%	, % to 3 in. diameter, #
One Pass, C. R. R. G. Soft Steel, Cleaned.	rer the price for Cold Rolled Copper. Planished Copper.	i is advance		hs, special prices.
One Pass, U. R. G. Soft Size! Cleaned. Nos. 14 to 16.	1# n more than Polished Copp	er.	Duty In Blocks or Western Speiter	Ples 14 W B
Nos. 25 and 26 W D, 4.05 4.10¢ No. 27 4.15 4.20¢	s. to square foot and heavier, # 5 s. and up to 14 os. to square foot, # 5 s. and up to 12 os., # 5 hter than 10 os. # 5 cles less than 8 in. diameter, 2/ # 5 ac cles over 13 in. diameter are not classe		Zinc Duty: Sheet,	
Russia, Planished, &c.	nter than 10 os . W B. les less than 8 in. diameter, 20 W B ad	lditional.	600 B casks6% Per	73
ment	Copper Wire-	id we copper	Duty: Pigs and Bars and Old Sheets. 2/6 # D.	2140 W b. Pipe an
Galvanized.	Hard and Soft Drawn—R. & S. Gan Last March 2, 1903.		Duty: Pigs and Bars and Old Sheets. 2% # B. American Pig. Bar. Pipe. Tin Lined Pipe. Block Tin Pipe. Sheet Lead, full rolls. Sheet Lead, cut. Old Lead in exchange, 4% i	
Bos. 10 to 16	0000 to 8 9 and 10 Base 5	11 and 13 34 # B adv.	Tin Lined Pipe Block Tin Pipe Sheet Lead, full rolls	12160 205 0 40 0 205 0
No. 10 to 30	17 18 19	36 P B adv. 20 36 P B adv.	Sheet Lead, cut	79(\$90% o
Mo. 30	Seamless Brass Tube	9-	Solde % & 14, guaranteed	r181/0181
Foreign Steel from Store	lered.	Diameter.	Prices of Solder indicated according to composition.	by private brand var
Extra Cast	tubs' B. & S. 14 5-26 36 7-26 36 9-26 36 36	76 x x34 x34	Antimo Duty, 34	Wib.
Best Doubles Sheat. Bilster, ist quality. German Steel, Best	TI 3-9	96 97 95 94 96 97 95 94		* D 81600
Blaster, 1st quanty	1	96 97 95 94 96 97 95 94 90 98 96 95	Duty: Crude, 8# 9 3. Plate	um— s, Sheets, Bars and Rod
Bd quality 9 5 12 6 8 Mushet's "Special" 9 5 46 9 75 6	16 14 43 39 37 34 33 32 31 17 15 44 4 3 39 35 34 33 39 18 15 61 46 42 39 36 35 34 32	31 30 27 25 31 30 27 25 31 30 28 27	No. 1 Aluminum (guaranteed	over 99% pure), in ingoi
# "Titanic" # B 19 #Bebson's Choice XX Extra Best. # B 35	## ## ## ## ## ## ## ## ## ## ## ## ##	33 32 30 25 35 34 32 31 37 36 35 36 38 37 37 3	Small lots	to be over 90 s pure)
Beamans' "Nelson" Steel	93 92 76 61 30 46 44 43 42 47 40 39 24 48 48 48 48 48 48 48 48 48 48 48 48 48	30 37 37 39 40 39 39 39 3 41 40 49 4	ingots for remelting: Small lots	
Tin-	25 24 20 71 30 31 49 47 40 43 20 20 20 20 20 20 20 2		Wider than	6-in. 14-in. 94-in. 94-in. 94-in. 94-in. 94-in. 94-in. 94-in. 94-in. 90.
DutyPigs, Bars and Block. Pres. Per bancs, Pigs. 97 (627)40 Bancs, Pigs. 97 (627)40 Btraits, Pigs. 97 (627)40 Bars and Block. Pres. 97 (627)40 Bancs, Pigs. 97 (627)40 Bars and Block. Pres. 97 (627)40 Bancs, Pigs. 97 (627)4	Iron Pipe Sizes-Bras	15	Nos 13 to 19	***************************************
Tin Plates-	14 % 14 % 1 114 114 2 214 3 314 4 4 3 82 20 27 21 21 21 21 21 21 21 23 23 3 Copper, Bronze or G‼ding Tubes, 3≠ ♥	additional	No. 24	
American Charcoal Plates,	Brazed Brass Tubin (To No. 19, inclusive.) Feb. 26	1896	No. 26	
IC, 14 x 90	Brown & Sharpe's gauge stands ain Round Tube, M n. up to 2 in	Per fi	No. 29 No. 30	
IC, 14 x 20			Aluminum Wire, B. & S. Gau	ige. No. 15
Allaway Grade: 7.2: IC, 14 x 20. 8.3: American Coke Plates-Bessemer—	8-16 5-16		8 No. 9 to No. 10. 9 B 40/46 15 No. 11	No. 17
IC, 14 x 90	lain Round Tube, 44 n. up to 2 in	Speci	Note - Lots of less than 39 18 18 18 18 18 18 18 1	No. 20
American Terne Plates-	war 9 inch to 314 inch. inclusive		old IM	etais,
80 90 x 98	ver 3% inch Bronze and Copper, advance on Brass l iscount from list \$		Light and linned Copper Heavy Brass	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3
11, 90 x 28	Roll and Sheet Bras	19-		
\$0 x 28	(Brown & Sharpe Standard G	lauge.)	Lead	
\$0, \$0 x 28. \$12.50@13.9 14 25@14.7 Tin Bolier Plates, American— xx 14 x 20. 112 sheets \$1.0.0 1x 14 x 38. 112 sheets \$1.0.0 1x 14 x 38. 112 sheets \$1.0.0 1x 14 x 38. \$1.0 1x 14 x 38. \$1.0	(Brown & Sharpe Standard G	lauge.)	Lead	7 1 2 1 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
\$0 x 28 \$12.50@13.8 11 x 28 14 25@14.7 Tin Boller Plates, American— EXX 14 x 28 118 sheets \$18.0 1XX 14 x 28 112 sheets 17.0 EXX 14 x 31 112 sheets 18.5 18.5 1	Roll and Sheet Brase Brown & Sharpe Shandard G			# 5 3 18